Soldier Evolution | System Solutions

PROGRAM EXECUTIVE OFFICE SOLDIER

PORTFOLIO FY2012

Foreword

The Soldier is our strength and our purpose at Program Executive Office Soldier. We acquire the best capabilities for our Nation's Army so that the U.S. Army continues to be dominant and decisive during the full spectrum of military operations.

We provide our Soldiers with the finest equipment and protection available as quickly as possible. We invest in our Soldiers to give them the decisive edge while also being good stewards of taxpayer funding.

Our commitment to the Soldier remains steadfast. The Soldier is the bedrock of our Army's ability to fight and win. We value this privilege to support our Army and our ongoing dedication to the protection and strength of the American Soldier.

Camille M. Nichols
Brigadier General, USA
Program Executive Officer Soldier

Table of Contents

Introduction 1

PROJECT MANAGER SOLDIER PROTECTION AND INDIVIDUAL EQUIPMENT (PM SPIE) 6

PRODUCT MANAGER SOLDIER PROTECTIVE EQUIPMENT (PM SPE) 8

Body Armor, Interceptor (IBA) 10
Soldier Plate Carrier System (SPCS) 12
Advanced Bomb Suit (ABS) 14
Body Armor, Legacy Concealable (CBA). 16
Body Armor, Family of Concealable ((FoCBA) 18
Advanced Combat Helmet (ACH) 20
Enhanced Combat Helmet (ECH) 22
Combat Helmet Suspension System 24
Combat Vehicle Crewman Helmet (CVCH) 26
Generation II Helmet Sensor (GEN II HS). 28
Military Combat Eye Protection (MCEP), Goggles 30
Military Combat Eye Protection (MCEP), Spectacles. 32
Ballistic and Non-Ballistic Protection 34
Soldier Protective Equipment Future Initiatives. 36

PRODUCT MANAGER SOLDIER CLOTHING AND INDIVIDUAL EQUIPMENT (PM SCIE) 38

Army Service Uniform (ASU) 40
Personal/Optional Clothing and Equipment 42
Army Combat Uniform (ACU) 44
Army Aircrew Combat Uniform (A2CU). 46
Improved Combat Vehicle Crewman (iCVC) Coverall 48
Army Combat Shirt (ACS) 50
Army Combat Pant (ACP). 52
Infrared Retroreflective (IR) Flag 54
Flame Resistant Environmental Ensemble (FREE) 56
Army Elements Fleece (AEF) 58
Generation III Extended Cold Weather Clothing System (GEN III ECWCS). 60
Army Combat Boot (Temperate Weather). 62
Cold (Wet and Dry) Weather and Specialty Boots 64
Hot (Wet and Dry) Weather Boots 66

Intermediate Cold Wet Glove (ICWG) 68
Gloves, Cold Weather 70
Gloves, Temperate and Hot Weather 72
Gloves, Utility 74
Utility Uniforms and Accessories 76
Modular Lightweight Load-carrying Equipment (MOLLE) 78
Load Carriage-Related Equipment 80
Individual Soldier Hydration 82
Family of Flashlights (FoF) 84
Sleep Systems 86
Improved Camouflage Face Paint 88
Ghillie Suit Accessory Kit (GSAK) Upgrade 90
Lightweight Performance Hood (LPH) 92
Chemical Protective Clothing 94
Chemical Protective Clothing–Accessories 96
Toxicological Ensembles 98
Modern Army Combatives Kit (MACK) 100
T-10D Parachute 102
Military Free Fall (MFF) Parachute System 104
Maneuverable Canopy (MC) Personnel Parachute Systems 106
Non-Maneuverable Canopy (T-11) Personnel Parachute System 108
Parachutist Equipment 110
Soldier Clothing and Individual Equipment Future Initiatives 112

PROJECT MANAGER SOLDIER SENSORS AND LASERS (PM SSL) 114

PRODUCT MANAGER SOLDIER MANEUVER SENSORS (PM SMS) 116
Thermal Weapon Sight (TWS), AN/PAS-13 118
Enhanced Night Vision Goggle (ENVG), AN/PSQ-20 120
Monocular Night Vision Device (MNVD), AN/PVS-14 122
Aviator's Night Vision Imaging System (ANVIS), AN/AVS-6 124
Clip-on Sniper Night Sight (Clip-on SNS), AN/PVS-30 126
Multifunction Aiming Light (MFAL) 128
Integrated Laser White Light Pointer (ILWLP), AN/PEQ-14 130
Sense Through The Wall (STTW), AN/PPS-26 132
Individual Gunshot Detector (IGD) 134
Weapons Mounted Light (WML) and Crew Served Weapons Light (CSWL) 136
LA-8/P Aircrew Laser Pointer (ALP) 138
Green Laser Interdiction System (GLIS) 140
Soldier Sensors and Lasers Future Initiatives 142

PRODUCT MANAGER SOLDIER PRECISION TARGETING DEVICES (PM SPTD) 144
Laser Target Locator (LTL) 146
Lightweight Laser Designator Rangefinder (LLDR), AN/PED-1 148
Joint Effects Targeting System (JETS) 150
Small Tactical Optical Rifle Mounted (STORM) Micro Laser Rangefinder (MLRF), AN/PSQ-23 152

PROJECT MANAGER SOLDIER WARRIOR (PM SWAR) 154

PRODUCT MANAGER AIR WARRIOR (PM AW) 156

Air Warrior (AW) 158
Air Soldier System (AirSS) 160
Encrypted Aircraft Wireless Intercom System (EAWIS) 162
Aircrew Integrated Helmet System (AIHS), HGU-56/P 164
Communication Ear Plugs (CEP), and Communications Enhancement and Protection Systems 166
Apache Aircrew Integrated Helmet (AAIH) 168
Electronic Data Manager (EDM) 170
Survival Kit, Ready Access, Modular (SKRAM) 172
Heads-Up Display (HUD) System, AN/AVS-7(V) 174
Laser Eye Protection Visor 176
Maxillofacial Shield (MFS) 178
Microclimate Cooling System (MCS) 180
Portable Helicopter Oxygen Delivery System (PHODS) 182

PRODUCT MANAGER GROUND SOLDIER (PM GS) 184

Land Warrior (LW) 186
Nett Warrior (NW) 188
Tactical Communication and Protective System (TCAPS) 190

PRODUCT MANAGER MOUNTED SOLDIER SYSTEM (PM MSS) 192

Mounted Soldier System (MSS) 194

PROJECT MANAGER SOLDIER WEAPONS (PM SW) 196

PRODUCT MANAGER INDIVIDUAL WEAPONS (PM IW) 198

XM25, Individual Semi-Automatic Airburst System (ISAAS) 200
M4/M4A1 Carbine 202
M16A2/A4 Rifle 204
M320 Grenade Launcher (GL) 206
M203A2 Grenade Launcher 208
M26 12-Gauge Modular Accessory Shotgun System (MASS) 210
M500 Shotgun 212
M107 Semi-Automatic Long Range Sniper Rifle (LRSR) 214
XM2010 Enhanced Sniper Rifle 216
M110 7.62mm Semi-Automatic Sniper System (SASS) 218
M24 Sniper Weapon System (SWS) 220
M151 Improved Spotting Scope 222
M14 7.62mm Enhanced Battle Rifle (EBR) 224
M9 Pistol 226
M16/M4 Magazine 228
M68 Close Combat Optic (CCO) 230
M150 Rifle Combat Optic (RCO) 232
Close Quarters Battle Kit (CQB Kit) 234
Individual Weapons Future Initiatives 236

PRODUCT MANAGER CREW SERVED WEAPONS (PM CSW) 238
M153/A1/A2 Common Remotely Operated Weapon Station (CROWS) 240
MK19 Grenade Machine Gun 242
M2/M2A1 .50 Caliber Machine Gun 244
XM806 .50 Caliber Machine Gun 246
M240B/L/H 7.62mm Medium Machine Gun 248
M240B/L Accessories 250
M249 5.56mm Squad Automatic Weapon (SAW) 252
M249 Squad Automatic Weapon (SAW) Accessories 254
M145 Machine Gun Optic (MGO) 256
Improved Machine Gun Tripod Systems 258
Family of Binoculars 260
Close Combat Mission Capability Kit (CCMCK) System 262
Crew Served Weapons Future CROWS Initiatives 264

Glossary 269
Contractors by State 279
International Contractors 283
Index 284
PEO Soldier Offices 289

PROGRAM EXECUTIVE OFFICE SOLDIER

For the past decade, Program Executive Office (PEO) Soldier has provided our Soldiers with capabilities to ensure they remain decisive and dominant throughout the full spectrum of military operations. Our Army conducts offensive operations, defensive operations, stability operations and civil support operations with Soldiers equipped and trained to use the very best equipment and capabilities that PEO Soldier can provide.

Since the Terrorist Attacks on September 11th, 2001, our Army has been operating in many challenging environments. We have been conducting operations in Iraq and Afghanistan while simultaneously performing humanitarian assistance missions or contingency operations. As our forces withdraw from Iraq and Afghanistan, we remain vigilant in ensuring that our Soldiers are equipped to be effective wherever our nation's interests dictate. PEO Soldier is making a deliberate effort to integrate technologies for the Soldier as a System. As our Soldiers evolve we are working hard to provide system solutions that provide the greatest capabilities for them.

PEO Soldier has been solely dedicated to the American Soldier for the past decade and will continue into an uncertain future. The book you are holding details more than 450 products that are a manifestation of that dedication. Our four Project Management (PM) Offices are dedicated to providing the very best equipment. These four offices are: PM Soldier Protection and individual Equipment, PM Soldier Sensors and Lasers, PM Soldier Warrior and PM Soldier Weapons.

The Army Vision focuses on continuing to be the pre-eminent landpower force that is ready and relevant to meet the challenges of an ever-evolving security environment. We will continue to innovate to ensure a versatile, expeditionary, agile, lethal, sustainable and interoperable force that faces the challenges of the 21st Century. The PEO Soldier Team is proud to serve the Soldier – Soldiers are our strength and our purpose!

Project Manager Soldier Protection and Individual Equipment (PM SPIE)

Product Manager Soldier Protective Equipment

Product Manager Soldier Clothing and Individual Equipment

PM SPIE develops and fields advanced Soldier protection products, comfortable uniforms that enhance mission effectiveness, and improved parachute systems. These products are designed to protect Soldiers and allow them to operate in any conditions.

"One of the officers in my battalion; his vehicle was hit by an EFP (Explosively Formed Penetrator). If it wasn't for his ACH helmet, he would have died."

– CSM Sam Young

PRODUCT MANAGER SOLDIER PROTECTIVE EQUIPMENT (PM SPE)

Increase Warfighter lethality and mobility, by optimizing Soldier protection while effectively managing all life cycle aspects of personal protective equipment.

The **Advanced Combat Helmet (ACH)** provides ballistic protection in a lightweight, comfortable system. The ACH can also support sensor systems to provide potentially valuable information about battlefield head injuries.

The **Soldier Plate Carrier System (SPCS)** provides ballistic protection equal to or greater than that of the Improved Outer Tactical Vest in a stand-alone capacity, while reducing the Soldier's load, enhancing comfort, and optimizing mobility. The SPCS gives commanders more choices in how to carry out their missions while giving Soldiers greater flexibility to operate in demanding terrain.

Body Armor, Interceptor (IBA)

MISSION

Provides the Soldier with enhanced protection from ballistic and blast effects while maintaining comfort and maneuverability.

Interceptor Body Armor (IBA) is a modular protective system consisting of an outer vest, ballistic plates, and attachable components that increase the area of coverage. IBA can stop or slow bullets and fragments, thus reducing the number and severity of wounds. In addition to its protective qualities, IBA is designed to provide Soldiers with lighter-weight comfort and greater maneuverability.

The Improved Outer Tactical Vest (IOTV) provides protection from fragments and 9mm rounds. **Enhanced Small Arms Protective Insert (ESAPI)** plates worn inside the front and rear to protect vital organs and **Enhanced Side Ballistic Insert (ESBI)** plates provide additional coverage as they protect the wearer's sides between the front and rear ballistic plates. The **X-Threat Small Arms Protective Insert (XSAPI)** and **X-Side Ballistic Insert (XSBI)** plates were designed to meet near-term emerging threats and provide additional ballistic protection against more lethal small-arms rounds. The plates can withstand multiple small-arms hits, including armor-piercing rounds.

Deltoid protectors compatible with the IOTV extend protection from handgun and fragmentation to the upper arm area. The IOTV has throat and underarm protection built in, with lower back and groin protection that can be added as needed.

The side-opening IOTV has an increased area of coverage over the OTV. It includes multiple adjustment points to improve fit, weight distribution, and load-carriage capabilities. A single quick-release added to the front of the vest allows a Soldier to remove the IOTV and its attachments with one pull. The IOTV comes in 11 sizes, including three tall sizes. A medium IOTV provides 1085 square inches of fragment and ballistic protection.

Non-Destructive Test Equipment (NDTE) uses digital X-rays to detect any physical defects in body armor plates, and thus ensures that Soldiers are equipped with mission-capable body armor while in theater. NDTE is a portable, deployable, self-contained system that can scan a plate in 15 seconds or less, or as many as 240 plates in an hour.

PROGRAM STATUS

- ✔ In sustainment - ESAPI, ESBI

PROJECTED ACTIVITIES

- + **FY12** Army Purchase Objective for the IOTV (966,000)
- + **FY12** Transition XSAPI and XSBI to sustainment

CONTRACTORS

IOTV

Point Blank Body Armor (Pompano Beach, FL)

BAE Systems (Dunmore, PA)

KDH (Eden, NC)

Protective Products Enterprise (Sunset Beach, FL)

UNICOR (Yazoo, MS)

ESAPI

Ceradyne Inc. (Costa Mesa, CA); BAE Systems (Phoenix, AZ); Armacel (Camarillo, CA)

ESBI

Plate: Ceradyne Inc. (Costa Mesa, CA); ArmorWorks (Tempe, AZ)

XSAPI

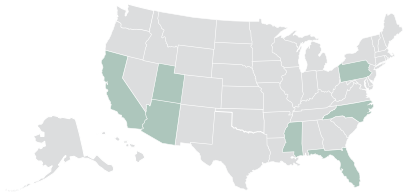
Ceradyne Inc. (Costa Mesa, CA); BAE Systems (Phoenix, AZ); The Protective Group Inc. (Miami Lakes, FL)

XSBI

ArmorWorks (Chandler, AZ); BAE Systems (Phoenix, AZ); Armacel (Camarillo, CA); Ceradyne, Inc. (Costa Mesa, CA)

NDTE

JDLL (Midvale, UT)



NDTE

Soldier Plate Carrier System (SPCS)

MISSION

Provides ballistic protection equal to or greater than that of the Improved Outer Tactical Vest in a standalone capacity with reduced Soldier load and optimum mobility.

The **Soldier Plate Carrier System (SPCS),** when used in conjunction with the Enhanced Small Arms Protective Insert and the Enhanced Side Ballistic Insert, provides National Institute of Justice Level IV+ ballistic protection. The SPCS provides a lightweight vest that weighs 5.85 pounds in size medium without ballistic plates, and 21.85 pounds in size medium with ballistic plates. The SPCS has adjustable shoulder and side straps to secure a proper fit and to keep the vest in place with minimal shifting during wear. Other features include padded shoulders, a 500 denier Cordura™ outer carrier, cable release, wrap-to-front design for a secure fit with easy donning, man-down drag strap, wire channel buttonholes, and Modular Lightweight Load-carrying Equipment (MOLLE) webbing for securing mission essential equipment.

The SPCS is compatible with the Soldier's basic fighting load, allowing carriage of essential equipment including M-4/M-16 magazines, hydration system, squad radio, night vision equipment, and comfortable, secure, and balanced wear of a day pack or rucksack.

The SPCS is available in five sizes from X-small through X-large.

PROGRAM STATUS

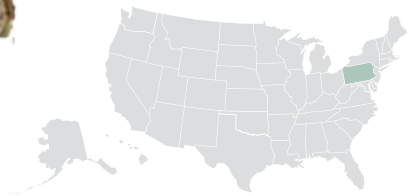
- **3QFY09** Soldier Protection Demonstration VII completed
- **4QFY09** Directed requirement for Universal Camouflage Pattern (UCP) plate carriers received
- **4QFY09** Solicitation for plate carrier buy issued to industry
- **1QFY10** Contract awarded to KDH Defense Systems for 57,000 UCP plate carriers
- **2QFY10** Delivery of UCP plate carriers completed
- **2QFY10** Directed requirement for Operation Enduring Freedom Camouflage Pattern (OCP) plate carrier received
- **3QFY10** Contract modification issued to KDH Defense Systems Inc. for 57,000 retrofit kits in OCP pattern
- **4QFY10** Finish delivery of 57,000 OCP pattern retrofit kits
- **1QFY11** Began fielding of OCP retrofit kits 3QFY11 Issue solicitation as a Small Business Set Aside for follow-on OCP SPCS buy
- **3QFY11** Completed emergency procurement and delivery of 3,000 OCP SPCS from KDH Defense Systems, Inc.

PROJECTED ACTIVITIES

- **4QFY11** Meet Army Purchase Objective
- **1QFY12** Finish fielding of OCP plate carriers

CONTRACTORS

KDH Defense Systems Inc. (Johnstown, PA)



Advanced Bomb Suit (ABS)

MISSION

Protects the Explosive Ordnance Disposal (EOD) Soldier from threats associated with improvised explosive devices, including fragmentation, blast overpressure, impact, heat, and flame.

The **Advanced Bomb Suit (ABS)** is a full body ensemble that leverages new material technology and design to improve protection, comfort, and ergonomics. To minimize weight and maximize flexibility, fragmentation protection is provided at various levels, specific to body regions, based on wounding potential. Blast overpressure protection is provided to the front of the thorax. Impact protection is provided to the head and spine. Heat and flame protection are provided by flame resistant materials. The suit includes an ice-based cooling system to extend mission duration. A hand protection module provides increased protection. The system can be taken off in less than 30 seconds. All ballistic inserts are removable to facilitate laundering and repair. The system is equipped with provisions that allow for future communications, performance, and capability upgrades.

PROGRAM STATUS

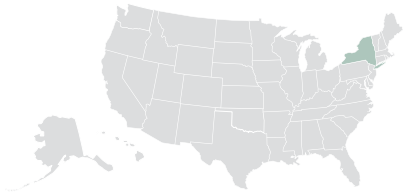
- ✔ **4QFY08** Completed ABS ensemble fielding EOD/8 ABS/ EOD9 Gen II Helmet
- ✔ **1QFY10** EOD execution order changing Army Purchase Objective to increase unit sizes; additional bomb suit ensembles will be required in FY10–14
- ✔ **3QFY11** Transition to S-PSID for sustainment as "Item Manager"
- ✔ **4QFY11** Army Purchase Objective met

PROJECTED ACTIVITIES

- + Continue sustainment
- + Continue communications and nuclear, biological, and chemical improvements

CONTRACTORS

Allen Vanguard (Ogdensburg, NY)



Body Armor, Legacy Concealable (CBA)

MISSION

Provides optimum mobility, protection, comfort, and suitability for operational environments ranging from police duties to support of operations other than war.

Concealable Body Armor (CBA) is a concealable, lightweight, and flexible vest that allows free range of motion and protection against ballistic threats. The CBA is optimized to be comfortable for wear over extended periods of time.

The CBA is intended to be worn by Soldiers in military police units, corrections, confinement, and law enforcement operations, Department of Defense investigative and security components, and other U.S. military forces.

The missions of these service personnel expose them to a variety of threats from small arms (handguns and small caliber weapons). The torso coverage protects against ballistics for a 9mm, 357 and 44 Magnum bullets In accordance with NIJ IIIA standards.

PROGRAM STATUS

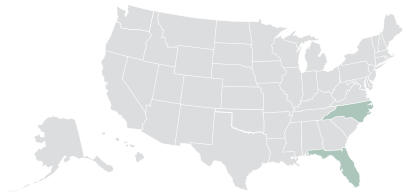
- ✔ **2QFY08** Informed that vendor no longer makes CBA
- ✔ **3QFY08** Conducted market survey for other potential CBA systems
- ✔ **4QFY08** Provided validation of interim solutions
- ✔ **4QFY09** Initiated buy of 10,000 commercial CBAs as interim solution to satisfy urgent fielding requirements

PROJECTED ACTIVITIES

- \+ **4QFY11** Sustainment

CONTRACTORS

Point Blank Body Armor (Pompano Beach, FL)
MSA Paraclete (St. Pauls, NC)



Body Armor, Family of Concealable (FoCBA)

MISSION

The FoCBA provides optimum mobility, protection, comfort, and suitability for operational environments ranging from police duties to support of operations other than war.

The **Family of Concealable Body Armor (FoCBA)** will initially provide two vests; one with ballistic and stab protection (Type 1) and a second vest with stab-only protection (Type 2). The FoCBA will be comfortable to wear over extended periods of time and is intended to be worn by Soldiers in correction, confinement, law enforcement, intelligence operations, and other U.S. military forces with the objective of increasing military police survivability for missions requiring concealable body armor.

The missions of these service personnel expose them to a variety of threats from small arms (handguns and small caliber weapons), knives, blades, spikes, and other improvised weaponry. The FoCBA offers maximum torso (vital organ body area) coverage for ballistics: 9mm FMJ, 357 and 44 MAG protections per Army Protocol (NIJ 0101.06, Ballistic Resistance of Body Armor) and Stab Protection edge blade and spike (NIJ 0115.00, Stab Resistance of Personal body Armor).

PROGRAM STATUS

- ✓ **3QFY10** Army Maneuver Support Center validates requirements
- ✓ **3QFY11** Test Evaluation Master Plan approved and entered into Milestone B - Engineering and Manufacturing Development

PROJECTED ACTIVITIES

- + **4QFY11** Key Performance Parameter Testing
- + **2QFY12** Vest Characterization Testing
- + **3QFY12** Milestone C - Production and Deployment
- + **3QFY12** Full Rate Production

CONTRACTORS

To Be Determined

Type 1 Ballistic-Level IIIA/Stab Level 1
(in development)

Type 2 Stab-only Level
(in development)

Advanced Combat Helmet (ACH)

MISSION

Provides the Soldier improved ballistic protection, stability, and comfort without degrading vision or hearing.

The **Advanced Combat Helmet (ACH)** is a modular system that weighs less, fits better, and is more comfortable than its predecessor. Modular, flame-retardant, and moisture-resistant pads act as the suspension system between the wearer's head and the helmet. The cotton/polyester chin strap, a four-point design, allows for quick adjustment and includes a new Ballistic NAPE Protective Pad for the neck that adds ballistic protection between the bottom of the helmet shell and the top of the Interceptor Body Armor collar. The edge of the ACH shell is finished with rubber trim. The ACH is available in five sizes from small through XX-large.

PROGRAM STATUS

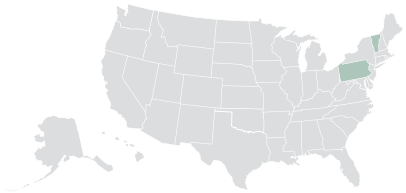
- ✔ **FY11** Continued fielding via Rapid Fielding Initiative
- ✔ **FY11** Continued fielding ballistic nape pad for helmet via Rapid Fielding Initiative

PROJECTED ACTIVITIES

- \+ **4QFY11** Partnership between National Industry for the Blind (NIB) and Ops Core for an improved ACH Retention System
- \+ **FY12** Continue sustainment activities for ACH and components through Defense Logistics Agency-Troop Support
- \+ **FY12** Work with users and industry to develop improved ACH Suspension System

CONTRACTORS

Mine Safety Appliances (Newport, VT)
BAE Systems (Dunmore, PA)
Gentex (Carbondale, PA)



Enhanced Combat Helmet (ECH)

MISSION

Enhances ballistic protection, stability, and comfort without degrading the Soldier's field of vision and hearing.

The **Enhanced Combat Helmet (ECH)** is a joint PEO Soldier/Marine Corps Systems Command developmental effort that will provide increased protection against ballistic and fragmentation threats. It uses advanced thermoplastic materials that require different manufacturing processes than those associated with resin-impregnated para-aramids. The materials are ultrahigh molecular weight polyethylene.

PROGRAM STATUS

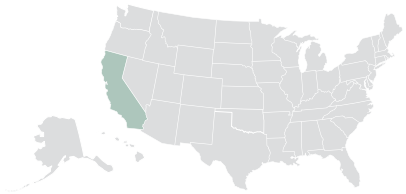
- ✓ **1QFY11** Milestone C full-rate production decision

PROJECTED ACTIVITIES

- \+ **4QFY11** First Article Test
- \+ **2QFY12** First units equipped

CONTRACTORS

Ceradyne Inc. (Costa Mesa, CA)



Combat Helmet Suspension System

MISSION

Provides the Soldier with impact protection that significantly reduces the severity of head trauma.

The **Combat Helmet Suspension System**, when properly inserted into the Advanced Combat Helmet (ACH), provides a non-ballistic impact force protection level of 150g against impacts of 10 feet per second, thereby significantly reducing the severity of head trauma to Soldiers. The system features seven pads of modular, lightweight, and moisture-resistant materials that act as the suspension system between the wearer's head and the helmet shell. The pads come in 2 sizes—3/4- and 1-inch thickness. The pads are easily attached, removed, and reattached to the inside helmet shell via hook tape disks permanently attached to the inside of the helmet shell.

PROGRAM STATUS

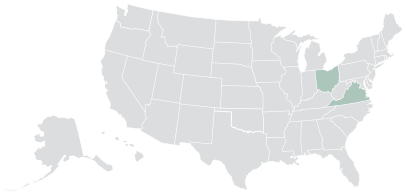
- ✔ **3QFY11** Released an RFI and held an Industry Day for Improved helmet suspension system

PROJECTED ACTIVITIES

- \+ **4QFY11** Planned release of the RFP for Improved helmet suspension system
- \+ **FY12** Continue sustainment activities through DLA TS
- \+ **FY12** Blunt impact testing and human factors testing for the improved helmet suspension system
- \+ **FY12** Partnership between NIB and select vendor(s) to produce the improved helmet suspension system

CONTRACTORS

National Industries for the Blind (Alexandria, VA) with Team Wendy (subcontractor) (Cleveland, OH)



Combat Vehicle Crewman Helmet (CVCH)

MISSION

Provides ballistic protection to the Soldier's head, temples, ears, and neck from fragmenting munitions without degrading vision, stability, and hearing.

The **Combat Vehicle Crewman Helmet (CVCH)** consists of a rigid, compression-molded outer shell constructed of Aramid Kevlar fabric coated with phenolic and polyvinyl butyral resins. The shell has rubber-edging adhesive along its peripheral contour.

The liner is constructed with energy-absorbing foam sections enclosed in a flame-resistant Nomex mesh fabric. The CVCH is attached to a fabric mesh inner liner by snap fasteners and hook-and-pile tape. Leather fastener mounts on the front of the helmet are used to attach the shell to the chin strap.

PROGRAM STATUS

- ✓ **FY11** All items in sustainment available for requisition through Defense Logistics Agency-Troop Support

PROJECTED ACTIVITIES

- \+ **FY12** Continue sustainment activities
- \+ **FY12** Product Demonstration Testing on new materials for CVCH Shell

CONTRACTORS

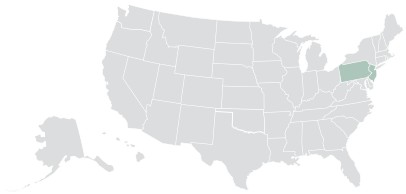
Electronic Components

Sonetronics (West Belmar, NJ)

Helmet Shell

Gentex (Carbondale, PA)

BAE Systems (Jessup, PA)



Generation II Helmet Sensor (GEN II HS)

MISSION

Detects and provides analysis of explosions and other impact events that can lead to head trauma.

The **Generation II Helmet Sensor (HS)** and **Data Retrieval System (DRS)** is intended to serve Warfighters as a state of the art data collection system that can be used in both operational and training environments.

The HS-DRS measures, records and stores physical property measurements and characteristics related to the Soldier's motion effects and responses associated with explosions, blasts and a wide range of shock and impact behavior.

The HS data will be analyzed in CONUS by the Medical Research and Materiel Command (MRMC) to support the development of an injury risk criterion and link sensor data with potential injury driven events.

There are two variants of the GEN II HS. Both variants are small, light weight, low power assemblies mounted and attached inside the Advanced Combat Helmet (ACH) at the crown location using adhesive techniques. One HS weighs approximately 2.14 ounces and the other weighs about 1.78 ounces. Each is fitted inside of the helmet and, when installed, are both covered by the helmet circular crown pad. The helmet fits and feels the same to the Soldier, with or without the HS installed.

Each variant of the GEN II HS has its respective DRS associated with it. One DRS utilizes a hand held scanner and/or Computer Processing Unit (CPU) set-up with a wireless dongle. The hand held scanner and CPU are installed with a custom software utility database application tool to allow for data collection. USB cables are used to connect a hand held reader to the HS and CPU depending on the data collection technique being used. The other variant's DRS utilizes an Ultra High Frequency (UHF) Identification wireless communication and router connected to a CPU controller to query HS in the immediate area to determine their event status and produces a summary report indicating which HSs have data that needs to be downloaded. Data downloading is accomplished by connecting the HS via USB port to a standalone computer which has HS software installed.

PROGRAM STATUS

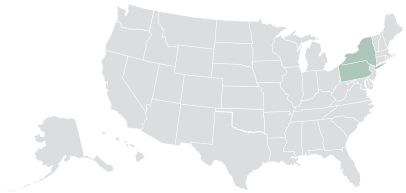
- ✔ **3QFY10** GEN II Contract Award
- ✔ **3QFY11** Conditional First Article Test Approval

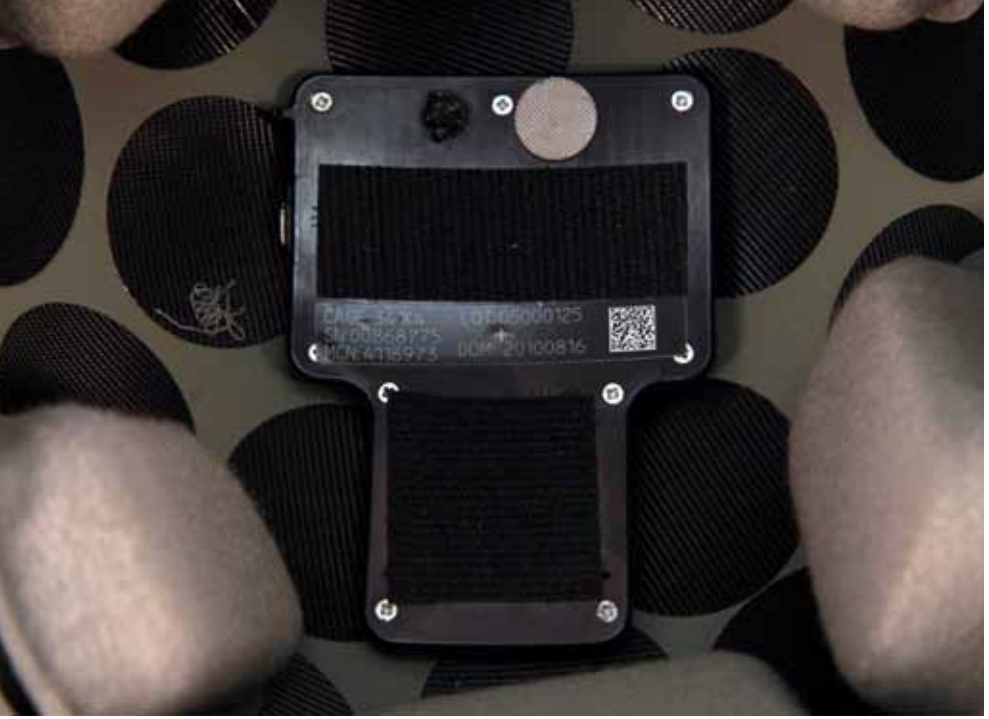
PROJECTED ACTIVITIES

- \+ **1QFY12** First Unit Equipped

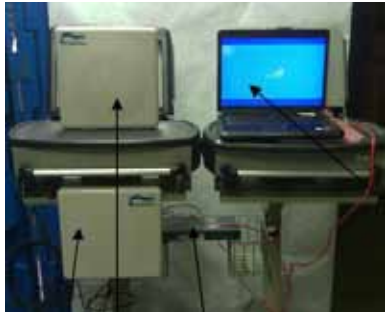
CONTRACTORS

BAE Systems (Jessup, PA)
Allen-Vanguard (Ogdensburg, NY)





NORMAD Scanner



HEADS Data Retrieval System (DRS)

Military Combat Eye Protection (MCEP), Goggles

MISSION

Provides Soldiers with protection from ballistic fragmentation, ultraviolet light, laser threats, wind, sand and dust to reduce the risk of eye injuries.

The **Military Combat Eye Protection (MCEP)** program provides modern optical protection in a variety of styles and sizes. By giving Soldiers choices in modern eyewear that meets mission needs, the MCEP improves Soldier acceptance of approved eyewear and reduces the likelihood of eye injuries. The MCEP provides goggles for both prescription and nonprescription wearers.

The MCEP program qualifies commercial eyewear products through rigorous testing. Ballistic fragmentation, optical, operational testing, and certification to American National Standards Institute (ANSI) Z87.1 Standard for Occupational and Educational Personal Eye and Face Protection Devices are among the tests performed prior to consideration of a product for acceptance. Approved products are included on a Qualified Product List for eyewear.

Goggles currently listed include: Arena Flakjak, ESS Land Ops, ESS Profile NVG, Revision Desert Locust, and Smith Optics Outside the Wire (OTW). For Soldiers who require corrective lenses, three goggles, the ESS Profile NVG, Revision Desert Locust, and the Smith Optics OTW, have approved prescription lens carriers. Regular prescription glasses can be worn underneath the ESS Land Ops goggle. All items have assigned national stock numbers and may be purchased through normal supply channels. Service members who require a prescription may obtain the appropriate prescription lens carrier for their device through their garrison optometry clinic, deployed optometry clinic, or medical support section. Deployed soldiers may also obtain replacement prescription lenses through the G-Eyes website: https://g-eyes.amedd.army.mil/.

PROGRAM STATUS

- ✓ **FY11** Assessed new product submissions and design improvements, conducted periodic retention testing of products, and monitored vendor performance and quality control
- ✓ **FY11** Supported fielding of protective eyewear to deploying units
- ✓ **FY11** Evaluated commercial-off-the-shelf (COTS) lens products with alternative tints in response to user interest
- ✓ **FY11** Transition from Desert Sand 503 color to Tan 499 color In order to match OEF Camouflage Pattern (OCP)
- ✓ **FY11** Began use of polycarbonate prescription lenses in place of CR-39`
- ✓ **FY11** Added the letters “APEL” onto eyewear frames to indicate which COTS eyewear is authorized for use by the Warfighter

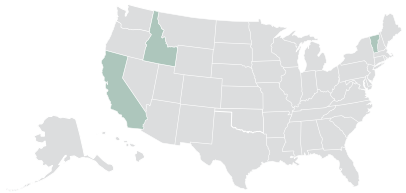
PROJECTED ACTIVITIES

- + **FY12** Improve fielded eye protection through evaluation/implementation of commercial design/process improvements
- + **FY12** Monitor vendor performance and quality control
- + **FY12** Evaluate new COTS candidates
- + **FY12** Support fielding of protective eyewear to deploying units and training base
- + **FY12** Work with medical and user communities, as well as industry, to address new/emerging requirements
- + **FY12** Work with government science and technology communities and end-item manufacturers to facilitate future transition of emerging technologies into protective eyewear
- + **FY12** Work toward implementation of Universal Prescription Lens Carrier (PLC)

CONTRACTORS

Commercial Eyewear

Arena Industries (Lake Forest, CA)
Eye Safety Systems Inc. (Sun Valley, ID)
Revision Military LTD. (Essex Junction, VT)
Smith Optics (Ketchum, ID)



Arena Flakjak

ESS Land Ops

ESS Profile NVG

Revision Desert Locust

Smith Optics Outside the Wire

Military Combat Eye Protection (MCEP), Spectacles

MISSION

Provides Soldiers with protection from ballistic fragmentations, ultraviolet light, laser threats, wind, sand and dust to reduce the risk of eye injuries.

The **Military Combat Eye Protection (MCEP)** program provides modern optical protection in a variety of styles and sizes. By giving Soldiers choices in modern eyewear that meets mission needs, the MCEP improves Soldier acceptance of approved eyewear and reduces the likelihood of eye injuries. The MCEP provides spectacles for both prescription and nonprescription wearers.

The MCEP program qualifies commercial eyewear products through rigorous testing. Ballistic fragmentation, optical, operational testing, and certification to American National Standards Institute (ANSI) Z87.1 Standard for Occupational and Educational Personal Eye and Face Protection Devices are among the tests performed prior to consideration of a product for acceptance. Approved products are included on a Qualified Product List for eyewear.

Spectacles currently listed include: ESS Crossbow, Oakley SI Ballistic M Frame 2.0, Revision Sawfly (size regular and large), Smith Optics Aegis, UVEX Genesis, UVEX XC, Wiley X PT-1, Wiley X SG-1, and Wiley X Talon. For Soldiers who require corrective lenses, the ESS Crossbow, Oakley SI Ballistic M Frame 2.0, Revision Sawfly, Smith Optics Aegis, UVEX Genesis, UVEX XC, and Wiley X Talon have approved prescription lens carriers. All items have assigned national stock numbers and may be purchased through normal supply channels. Service members who require a prescription may obtain the appropriate prescription lens carrier for their device through their garrison optometry clinic, deployed optometry clinic, or medical support section. Deployed soldiers may also obtain replacement prescription lenses through the G-Eyes website: https://g-eyes.amedd.army.mil/.

PROGRAM STATUS

- ✓ **FY11** Assessed new product submissions and design improvements, conducted periodic retention testing of products, and monitored vendor performance and quality control
- ✓ **FY11** Supported fielding of protective eyewear to deploying units
- ✓ **FY11** Evaluated commercial-off-the-shelf (COTS) lens products with alternative tints in response to user interest
- ✓ **FY11** Evaluated COTS variable transmission lenses in response to users' needs for a quick transition lens.
- ✓ **FY11** Began use of polycarbonate prescription lenses in place of CR-39
- ✓ **FY11** Added the letters "APEL" onto eyewear frames to indicate which COTS eyewear is authorized for use by the Warfighter

PROJECTED ACTIVITIES

- + **FY12** Improve fielded eye protection through evaluation/implementation of commercial design/process improvements
- + **FY12** Monitor vendor performance and quality control
- + **FY12** Evaluate new COTS candidates
- + **FY12** Support fielding of protective eyewear to deploying units and training base
- + **FY12** Work with medical and user communities, as well as industry, to address new/emerging requirements
- + **FY12** Work with government science and technology communities and end-item manufacturers to facilitate future transition of emerging technologies into protective eyewear
- + **FY12** Complete Phase II SBIR contracts for variable transmissive lenses
- + **FY12** Work toward implementation of Universal Prescription Lens Carrier (PLC)

CONTRACTORS

Commercial Eyewear

Eye Safety Systems Inc. (Sun Valley, ID)

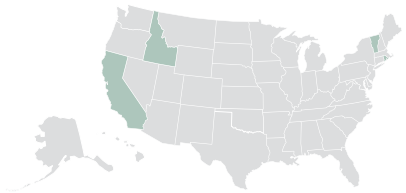
Honeywell International/Sperian Eye and Face Protection Inc. (UVEX brand) (Smithfield, RI)

Oakley USA (Foothill Ranch, CA)

Revision Military LTD. (Essex Junction, VT)

Smith Optics (Ketchum, ID)

Wiley X Eyewear by Protective Optics Inc. (Livermore, CA)



ESS Crossbow

Oakley SI Ballistic M Frame 2.0

Revision Sawfly

Smith Optics Aegis

UVEX Genesis

UVEX XC

Wiley X PT-1

Wiley X SG-1

Wiley X Talon

Ballistic and Non-Ballistic Protection

MISSION

Provides the Soldier with face, torso, and leg protection from a wide variety of threats during operations.

Ballistic and Non-Ballistic Protection is designed to enhance protection for Soldiers during a broad spectrum of operations. Items include Civil Disturbance Protective Gear, which provides face, torso, and leg protection from debris, liquids, hand-thrown objects, and direct or indirect fire. Ballistic protection items meet the National Institute of Justice Level IIIA requirements for 9mm and .44 Magnum bullet resistance.

The Ballistic Body Shield is made of Spectra-Shield; Shin Guards are made of Kevlar KM2; and the Ballistic Face Shield is made of acrylic and bullet-resistant polycarbonate materials. Non-Ballistic Face and Body Shields are made of transparent polycarbonate materials; non-ballistic shin guards are made of hard plastics.

PROGRAM STATUS

- ✓ **FY09** Items in sustainment and available by requisition

PROJECTED ACTIVITIES

- \+ **FY12** Continue sustainment activities

Ballistic Body Shield, Shin Guards, and Ballistic Face Shield

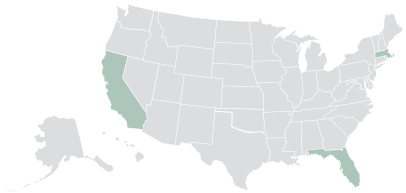
CONTRACTORS

Ballistic Body Shield and Face Shield
Protech Armored Products (Pittsfield, MA)

Ballistic Shin Guards
Protective Materials Co. (Miami Lakes, FL)

Non-Ballistic Body Shield
Civil Defense Supply (International) Ltd. (United Kingdom)

Non-Ballistic Face Shield
Paulson Manufacturing (Temecula, CA)



Non-Ballistic Face and Body Shields

Soldier Protective Equipment Future Initiatives

HEAD GEAR SYSTEM

Recent experiences in Operations Iraqi Freedom and Enduring Freedom have identified the need to integrate head protection against ballistics, fragmentation, blast, blunt force, flash heat, and noise into a single lightweight, modular, scalable headgear system. Program Executive Office (PEO) Soldier is working to develop a Soldier-centric Head Gear System (HGS) that provides ballistic and traumatic brain injury protection as well as face, neck, and hearing protection. The HGS also will incorporate integrated sensor inputs along with display hardware and software for increased situational awareness. The system will address technology gaps identified by the Capabilities Development Integration Directorate of the Army's Training and Doctrine Command by including:

- Upgradable protection against impact and ballistic threats.
- Optimized display and sensor input, both audio and visual, to deliver actionable information to the Warfighter.
- Modular, integrated chemical, biological, radiological, and nuclear (CBRN) protection.
- Face, neck, and hearing protection.
- Increased visual and audio data representation of the Warfighter.
- Optimized sensor packages for use in all natural and man-made conditions, such as obscurants.

The headgear system will be based on a modular platform for which protection levels and system enhancements can be added or removed based on mission requirements and/or predetermined threat assessments. HGS will be a lightweight, multifunctional system that protects Soldiers from wounds to the face without degrading range of motion or mobility. The system will monitor the degradation of a Soldier's ability to continue operations and will record exposure to blast events (e.g., improvised explosive devices, vehicles explosions). The HGS development effort will mature, evaluate, integrate, and demonstrate technologies for improved system performance in the areas of ballistic and impact protection, hearing protection and hearing enhancement, video displays, audio and communications systems, training sensors, and CBRN capabilities, with the overarching goal of improving comfort and combat-effectiveness. The projected completion date for this initiative is FY12.

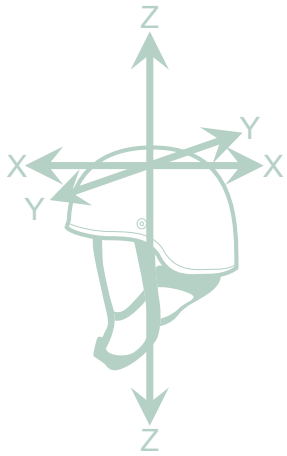
INDIVIDUAL BODY ARMOR

PEO Soldier is working toward the goal of body armor weight reduction using advanced fibers, improved ceramics, and optimized integration techniques for body armors. This effort will leverage the Modular Body Armor Platform Design and incorporate a review of the ANSUR II Anthropometric Model to re-evaluate the fifth to ninety-fifth percentile area of coverage requirements. Another major initiative is to develop advanced, low-cost technology for Smart Armor that has embedded microsensors for fast, reliable damage self-testing without using sophisticated instrumentation.

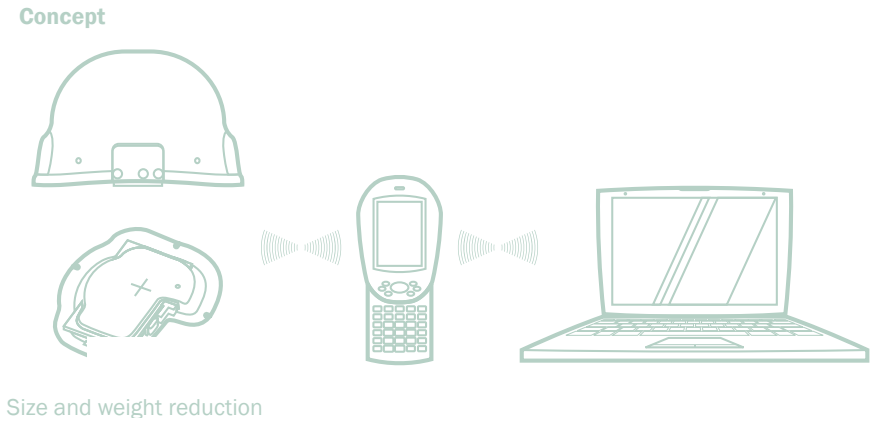
NEXT GENERATION HELMET SENSOR

PEO Soldier is aggressively pursuing the development and production of the Next Generation Helmet Sensor, an unobtrusive and unencumbered device integrated into combat helmets to measure, record, and store physical motion associated with kinetic energy threats such as ballistic impacts, blast peak overpressures, and a wide range of other impacts. This device will be fielded with a state-of-the-art data collection system that measures the magnitude and direction of both linear and angular accelerations, corresponding to six degrees of freedom. Improvements will include a reduction in the sensor's platform size and weight, extending the device's battery life to enable recharging for 12 months, and utilizing wireless technologies to query the sensor's operational history and functionality. The sensor, when employed, provides the Army with the capability to capture robust field data, sensing, measuring, and recording high-energy events affecting the Soldier. The sensor data collected will provide medical researchers with information to establish an injury correlation that helps discriminate between enemy attacks and the normal head and dynamic helmet motions observed in typical field activities. The data library created from the sensor data will support the development of an injury-risk criterion and will help identify sensor data trends that could point to events strongly correlated with injury. The Next Generation Helmet Sensor is scheduled for completion in FY12.

Concept Model GEN II



Six DoF allows for measuring linear and rotational accelerations in three-dimensional space



Size and weight reduction decreases Soldier load and interference with added sensory components and battery life

Wireless data transfer provides more efficient CONOPS

"Well, you know Soldiers get cold. Now with this system here, they can work through it. And as they sweat, the ECWCS will actually wick away the sweat, which therefore reduces the coldness on the body. That makes a huge difference. So you can work longer and be more efficient."

– SSG Arthur D. Stewart

PRODUCT MANAGER SOLDIER CLOTHING AND INDIVIDUAL EQUIPMENT (PM SCIE)

PM SCIE supports Soldiers in multiple operational environments and improves their survivability, health, safety, mobility, and sustainability by providing safe, durable, and operationally effective individual and unit equipment. PM SCIE provides technologically advanced tactical and environmental protective clothing, individual chemical protective gear, load-carrying systems, and personnel parachutes and other airdrop equipment.

The **Operation Enduring Freedom Flame Resistant Army Combat Uniform (OEF FR ACU),** which uses the Operation Enduring Freedom Camouflage Pattern (OCP), will provide concealment for Soldiers operating in Afghanistan's multiple-terrain environment.

The **Mass Tactical Canopy (T-11) Personnel Parachute System** provides paratroopers with a reduced rate of descent, allowing safe conduct of airborne operations day or night; in temperate, hot and extreme cold weather conditions; on water drop zones; and at high altitudes.

Army Service Uniform (ASU)

MISSION

Provides a basic set of components that allows Soldiers to dress from the lowest to the highest end of service uniforms with little variation required.

The **Army Service Uniform (ASU)** is based on the Army Blue Uniform. The designs of the men's and women's Army Blue Uniform coats remain unchanged. The belted trousers and slacks with a traditional low waistline will be available for daily wear. The high waist men's trousers traditionally worn with suspenders will be retained for wear with the Army Mess Dress Uniform. The men's coat, women's coat, women's skirt, general officer trousers, and slacks are shade Army Blue 450. The enlisted and officer/non-commissioned officer men's trousers and women's slacks are shade Army Blue 451. The ASU is made of durable materials that are suitable for daily use without special care. The fabric of the ASU coat, trousers, slacks and skirt is a blend of 55 percent polyester and 45 percent wool.

A new white herringbone shirt made of 65 percent polyester and 35 percent cotton will be for daily wear, and commercial off-the-shelf white dress shirts will be worn for ceremonial and formal occasions.

Officers and NCOs (corporal and above) will wear gold stripes on the trouser/slacks. Enlisted Soldiers (specialist and below) will have plain legs on the trousers/slacks and will wear new smaller service stripes on the left coat sleeve. One service stripe is worn for every three years of honorable service. Officers and enlisted Soldiers will wear overseas service bars on the right coat sleeve. One overseas service bar is authorized for six months of overseas service in designated areas during specified periods. The current black accessories, such as the windbreaker, all-weather coat, overcoat, and sweaters, may be worn with the ASU.

PROGRAM STATUS

✔ **1QFY11** Field in Clothing Bag

PROJECTED ACTIVITIES

\+ **1QFY16** Mandatory possession date

CONTRACTORS

Coats

DeRossi & Son Co. (Vineland, NJ)

Bremen Bowdon (Bowdon, GA)

Trousers

Royal Park Uniforms (Prospect Hill, NC)

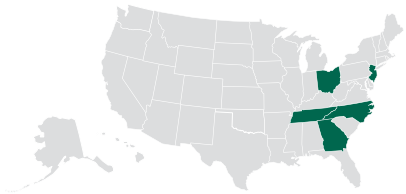
Omega (Smithville, TN)

Tennessee Apparel Corp. (Tullahoma, TN)

Slacks/Skirts

Vocational Guidance Service (Cleveland, OH)

Omega (Smithville, TN)



Personal/Optional Clothing and Equipment

MISSION

Provides a variety of standard issue and new clothing, insignia, and personal equipment to enhance fit, comfort, alterability, and appearance.

The **Beret** is a one-piece, unlined wool shell with a leather headband, draw cord, and lined badge-stay for attachment of insignia. The standard beret is black. Airborne Soldiers wear maroon berets, Special Forces wear green, and Rangers wear tan berets. The beret is standard-issue headgear.

The **All-Weather Coat** functions as a raincoat and a topcoat; double-breasted with a six-button front; set-in sleeves; pointed, button-down shoulder and sleeve straps; a front gun patch flap; two vertical welt pockets with pass-through slits; belt; center back pleat vent and half cape back; in black polyester/cotton blend.

The **Overcoat** is optional; it is warmer and dressier than the All-Weather Coat.

The **Men's Green Class A Service Uniform** includes a coat, trousers, shirt, necktie, belt, and buckle.

The **Women's Class A Uniform** includes slacks, a skirt, coat, shirt, neck tab, belt, and buckle.

The **Men's Class B Service Uniform** omits the coat and tie if the short-sleeve shirt is worn.

The **Women's Class B Service Uniform** is redesigned to improve fit, comfort, alterability, and appearance. It omits the coat or coat and neck tab, depending upon the shirt worn.

The **Maternity Cardigan Sweater** is optional; worn with maternity service uniforms; V-neck cardigan, longer in front than in back, has elbow and shoulder patches, epaulets with hook-and-loop attachments, and a six-button front.

The **White Cardigan Sweater** is optional; V-neck cardigan design with a rib knit trim around the front opening and neckline, rib knit cuffs, two lower front pockets, and a six-button front.

The **Poromeric Oxfords** are plain-toed shoes with removable cushioned insoles, skid-resistant soles, and breathable comfort lining.

PROGRAM STATUS

- ✔ All items are in service use
- ✔ **1QFY11** The ASU will replace the Army Green Class A/B Uniform in the Clothing Bag

PROJECTED ACTIVITIES

- \+ None

CONTRACTORS

Men's and Women's (unless otherwise marked)

Beret

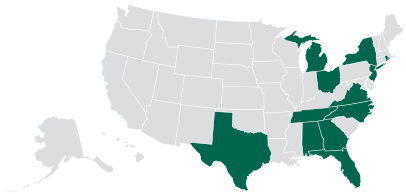
Jensen Apparel (Portsmouth, VA) and Northwest Woolen Mills (Woonsocket, RI)

All Weather Coat

American Apparel (Selma, AL)

Class A/B Service Uniforms

AG 489 Coat: DeRossi and Son Co. (Vineland, NJ); Bremen Bowdon (Bowdon, GA); AG 489 Trousers: Tennessee Apparel Corp. (Tullahoma, TN); Omega (Smithville, TN) AG 489 Slacks: VGS Inc. (Cleveland, OH); AG 489 Skirt: Omega (Smithville, TN); AG 415 Long Sleeve/Short Sleeve Shirt: Ashland Sales and Service (Macon, GA), Kandor Mfg. (Arecibo, PR); AG 415 Long Sleeve/Short Sleeve, Tuck-in Shirt (women's): Middle Georgia (Dublin, GA); Black Tie: Alabama Industries for the Blind (Talladega, AL); Black Neck Tab: National Industries of the Blind Inc. (Greensboro, NC), Industries for the Blind (Albany, NY); Black Cotton Web Belt, Gold Tip and Sand-colored Rigger Belt: Travis Association for the Blind (Austin, TX); Buckles: Coastal Enterprises (Jacksonville, FL); Maternity and White Cardigan Sweaters: Military Equipment Corp. of America (Morristown, NJ); Poromeric Oxfords: Wolverine Worldwide (men's) (Rockford, MI), Capps Shoe Co. Inc. (Lynchburg, VA)



Men's & Women's Class A Uniform

Poromeric Oxfords

Beret

White Cardigan Sweater

Maternity Cardigan Sweater

All-Weather Coat

Army Combat Uniform (ACU)

MISSION

Enhances mission performance with a functional uniform that can be tailored to situational demands.

The **Army Combat Uniform (ACU)** consists of a jacket and trousers in the Universal Camouflage Pattern (UCP). The ACU is normally worn with a black beret or a patrol cap in UCP, a moisture-wicking T-shirt, and Army combat boots (temperate or hot weather).

The ACU enhances Soldier performance by providing a functional, ergonomic uniform that can be tailored based on the mission. Based on Soldier satisfaction surveys, durability, and cost, a number of significant enhancements are envisioned for the ACU, including buttons for the cargo pockets, a reinforced crotch, and improved attachment of the infrared tab.

The ACU, including component materials, is manufactured in the United States using the same industrial base that produced the Battle Dress Uniform. This ensures the highest quality control and supports the American workforce.

The ACU is worn with ancillary items, including hook-backed embroidered U.S. Army tapes, name tapes, and rank and shoulder sleeve insignia. The ACU is machine-washable and contains a wrinkle-free treatment, decreasing out-of-pocket expense to Soldiers for expensive cleaning and starching.

PROGRAM STATUS

- ✓ **2QFY08** Fielded four Flame Resistant ACUs to deploying troops
- ✓ **3QFY08** Mandatory possession of four ACUs
- ✓ **FY09** Continue fielding four FR ACUs per deploying Soldier
- ✓ **FY09** Developed and evaluated improvements to fabric, design, and female fit
- ✓ **FY10** Add factory Permethrin insecticide treatment to FR ACU

PROJECTED ACTIVITIES

- \+ **FY13** Add factory Permethrin treatment to Clothing Bag ACUs
- \+ **FY14** Add ACUs with improved fabric, design, and women's fit into Clothing Bag

CONTRACTORS

ACU Coats

Bethel Industries (Jersey City, NJ); Bremen Bowdon (Bowdon, GA); Wellstone Apparel (Metairie, LA); DJ Manufacturing (Caguas, PR); American Apparel (Selma, AL); Golden Manufacturing (Golden, MS); Sidran Inc. (Brownwood, TX); Propper International (Mayaguez, PR); Ashland Sales/Macon (Olive Hill, KY); Tullahoma Industries (Tullahoma, TN); UNICOR (Greenville, NC; Manchester, KY); StEPS (Farmville, VA)

ACU Trousers

Wellstone Apparel (Tylertown, MS); Woolrich Inc. (Atlanta, GA); DJ Manufacturing (Caguas, PR); Propper International (Mayaguez, PR); Wear-Tech (Lajas, PR); Tullahoma Industries (Tullahoma, TN); Fox Apparel (Asheboro, NC); Goodwill Industries (Miami, FL); UNICOR (Atlanta, GA; Beaumont, TX; Seagoville, TX)

ACU Patrol Caps

Southeastern Kentucky Rehabilitation Industries (Corbin, KY); Bernard Cap Co. (Hialeah, FL); Propper International (Mayaguez, PR)

ACU Sun Hats

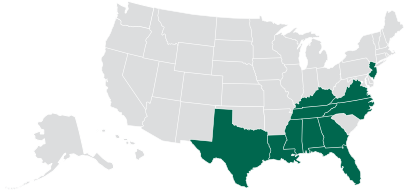
Bernard Cap Co. (Hialeah, FL); M&B Headwear (Richmond, VA)

ACU T-shirts

Federal Prison Industries (Washington, D.C.); Industries for the Blind (Alexandria, VA); Kandor Manufacturing (Arecibo, PR)

FR ACU Coat/Trousers

SNC Manufacturing (Camuy, PR); American Apparel (Selma, AL); Propper International (Cabo Rojo, PR); Tencate (Union City, GA); DJ Manufacturing (Caguas, PR)



Army Aircrew Combat Uniform (A2CU)

MISSION

Enhances aircrew comfort and provides flash fire protection during pre-flight, flight, post-flight, refueling, and other aviation operations.

The **Army Aircrew Combat Uniform (A2CU)** is a two-piece flight suit in the Universal Camouflage Pattern and Operation Enduring Freedom (OEF) Camouflage Pattern (OCP). The coat is similar to the ACU in design, with a stand-up collar featuring a front extension, shoulder patches, a front zipper, two inside hanging chest pockets with flaps; adjustable waist; two-piece set-in sleeves with elbow patches; two sleeve utility pockets with flaps and Identification Friend or Foe (IFF) tabs; and two lower sleeve pencil pockets with flaps. It can be worn with the Air Warrior Microclimate Cooling Vest. The trousers have nine pockets: two thigh pockets; two calf pockets with external tool pockets; one knife pocket with lanyard (on the left thigh); and two side hanging pockets. Pockets (except for the side hanging pockets and the lower leg external tool pockets) have flaps and zippers.

The A2CU upgrades the current Improved Aviation Battle Dress Uniform protective clothing system and provides operational effectiveness, fit, suitability, and durability, addressing near-term Air Warrior requirements.

PROGRAM STATUS

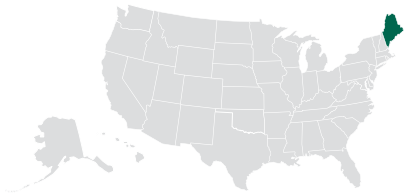
- ✔ **FY08** Fielded A2CUs to deploying aviators and fuel handlers
- ✔ **FY09** Available for requisition through Army Direct Ordering at Defense Logistics Agency-Troop Support in accordance with instructions posted on the Air Warrior Extranet, Forum section
- ✔ **FY10** Continue to field to deploying aviators and air crew members
- ✔ A2CU in sustainment with contract actions handled by Defense Logistics Agency-Troop Support
- \+ **FY11** Conversion to OCP and issue to aviators deploying ISO OEF

PROJECTED ACTIVITIES

- \+ **FY12** Continue to issue Soldiers ISO OEF

CONTRACTORS

SNC Manufacturing (Caguas, PR)
Creative Apparel (Belfast, ME)



164

Improved Combat Vehicle Crewman (iCVC) Coverall

MISSION

Provides combat vehicle crewmen with extraction capability and improved protection from flame and flash fires in all weather conditions.

The **Improved Combat Vehicle Crewman (iCVC) Coverall** is a one-piece flame-resistant garment with a front entry, zippered closure with dual sliders. It has a drop seat, upper back extraction strap, collar with front throat protection, zippers on the sleeves and legs, and nine pockets. The coverall is a blend of inherently flame-resistant fibers (39 percent Nomex), synthetic fibers (31 percent nylon), and 30 percent cotton. It is available in the Universal Camouflage Pattern and Operation Enduring Freedom (OEF) Camouflage Pattern (OCP).

PROGRAM STATUS

- **FY09** Continued fielding to deploying Combat Vehicle Crews (CVCs)
- **FY10** Continue fielding to deploying CVCs
- **FY10** Introduce into the Army Direct Ordering Program
- **FY11** Conversion to OCP and issue to Soldiers deploying ISO OEF
- iCVC in sustainment with contract actions handled by Defense Logistics Agency-Troop Support

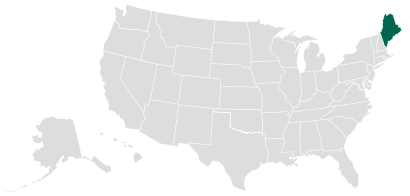
PROJECTED ACTIVITIES

- **FY12** Continue to issue to Soldiers ISO OEF

CONTRACTORS

Source for Native American Products (SNAP) (Eastport, ME)

Creative Apparel (Belfast, ME)



Army Combat Shirt (ACS)

MISSION

Provides the Soldier improved comfort and enhanced flame and thermal protection.

The **flame-resistant (FR) Army Combat Shirt (ACS)** is worn under the Soldier's Interceptor Body Armor instead of the Army Combat Uniform or the Army Aircrew Combat Uniform jacket and standard-issue T-shirt, reducing bulk for Soldiers operating in extreme climates.

The torso of the shirt is made of a highly breathable, moisture-wicking cotton/rayon/polyester/spandex blend that increases moisture vapor transmission, heat stress relief, and comfort when worn with the Improved Outer Tactical Vest. The FR sleeves are in the Universal Camouflage Pattern or Operation Enduring Freedom (OEF) Camouflage Pattern (OCP) and have integrated anti-abrasion elbow pads, shoulder pockets, infrared identification tags, and hook-and-loop fasteners for the name, rank, unit patch, and American flag. The shirt also features flat-seam shoulders and side panels for comfort, and is treated using a state-of-the-art FR process that fuses to the fibers. It is washable and maintains its flame resistance for the life of the garment.

PROGRAM STATUS

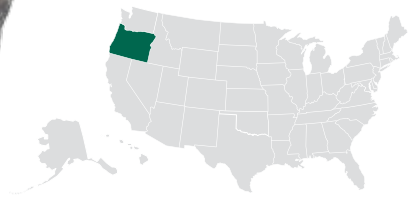
- ✓ **2QFY09** Began fielding to deploying Soldiers
- ✓ **2QFY09** Removed Army Strong logo from ACS
- ✓ **FY10** Continue fielding to deploying Soldiers
- ✓ **FY10** Made available to GSA
- \+ **FY11** Conversion to OCP and issue to Soldiers deploying ISO OEF

PROJECTED ACTIVITIES

- \+ **FY12** Continue to issue to Soldiers ISO OND/OEF

CONTRACTORS

Massif Mountain Gear Co. (Ashland, OR)
API Manufacturing (Camuy, PR)



Army Combat Pant (ACP)

MISSION

Provide the Soldier with increased durability and enhanced features over the current Fire Resistant Army Combat Uniform (FRACU) trouser.

The **Army Combat Pant (ACP)** is a flame resistant pant designed for use in rugged combat environments. These pants feature a ruggedized, anti-abrasion coated seat panel, stronger twill fabric in the body of the pants, and stretch fabric at key stress points. The ACP has integrated, removable hard-shell knee pads with both horizontal and vertical points of adjustment built into the pants. The body of the ACP is made of fabric which is a blend of flame resistant rayon, para-aramid, and nylon. The ACP is available in the Operation Enduring Freedom (OEF) Camouflage Pattern (OCP).

PROGRAM STATUS

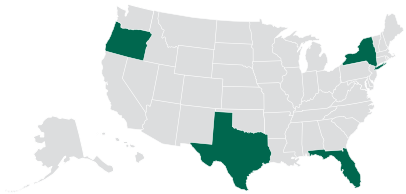
- ✓ **FY11** Contracts Awarded, 2Q-3QFY12
  Begin fielding to deploying Soldiers

PROJECTED ACTIVITIES

- \+ **FY13** Continue fielding to deploying Soldiers

CONTRACTORS

Crye Precision (Brooklyn, NY)
Massif Mountain Gear (Ashland, OR)
Propper International (Mayaguez, PR)
Ready One Industries (El Paso, TX)
Goodwill Industries (Miami, FL)



Infrared Retroreflective (IR) Flag

MISSION

Helps Soldiers identify friendly forces when near-infrared visions systems are required.

The Infrared Retroreflective (IR) Flag is an attachable patch that enables the identification of friendly forces. The flag becomes visible in dark environments when observed with near-infrared vision systems, such as Night Vision Goggles and near-infrared illuminators. The IR Flag is made of micro-prismatic, retroreflective black polymeric film contrasted with opaque desert sand stars and stripes. The IR Flag, which is 3.5 inches long by 2 inches wide, is secured to military uniforms with hook fastener tape.

PROGRAM STATUS

- **1Q–2QFY11** Conduct final technical tests on flags and update specifications
- **2QFY11–3QFY11** Submit and assist Defense Logistics Agency-Troop Support with documentation for full and open solicitation

PROJECTED ACTIVITIES

- **FY12** Continue fielding to deploying Soldiers with IR flag procured under GSA contract

CONTRACTORS

To be determined

GAINOUS

Flame Resistant Environmental Ensemble (FREE)

MISSION

Provides Soldiers a multi-layered, versatile, insulating system that is adaptable to varying operational and environmental conditions.

The **Flame Resistant Environmental Ensemble (FREE)** was engineered for comfort and functionality in and out of aircraft and armored vehicles. It is a comprehensive clothing system from skin to outerwear, from head to toe, and was designed to be compatible with current issue personal protective equipment. All layers of the FREE system incorporate flame-resistant technologies.

FREE will replace existing aviation and combat vehicle crewmen cold weather clothing. It is color-compatible (in Universal Camouflage Pattern and Operation Enduring Freedom Camouflage Pattern) with ground Soldier uniforms. The system's adaptability gives Soldiers more personal protection choices, a crucial factor in responding to current threats while facing extreme climate conditions.

PROGRAM STATUS

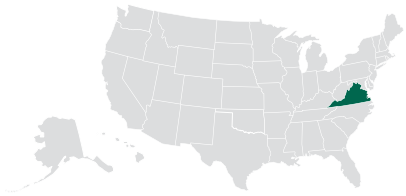
- ✓ **2Q–3QFY08** (Phase III) User evaluation in Korea
- ✓ **3QFY10** Initial Rapid Fielding Initiative

PROJECTED ACTIVITIES

- \+ **FY12** Continue to field via Rapid Fielding Initiative

CONTRACTORS

Atlantic Dive Supply (ADS) (Virginia Beach, VA)



Next to Skin Under Layer

Base Layer

Mid-weight Layer

Duty Uniform: (r) Army Aircrew Combat Uniform; (l) Improved Combat Vehicle Crewman (iCVC) Coverall

Light Weather Outer Layer (LWOL)

Intermediate Weather Outer Layer (IWOL)

Extreme Weather Outer Layer (EWOL)

FR riggers belt

FR glove liner

FR socks

Army Elements Fleece (AEF)

MISSION

Provides enhanced flame-resistant clothing system to aviators.

The Army Elements Fleece (AEF) is a versatile, insulating layer that allows aviation crews to adapt to varying mission requirements and environmental conditions. The primary fabric has an integrated Nomex fleece inner surface to insulate the Soldier against cold temperatures. The fabric is water resistant and windproof, but also breathable, to protect the Soldier in inclement weather including wind, rain, sleet, and snow. The outer layer is printed in the Universal Camouflage Pattern.

PROGRAM STATUS

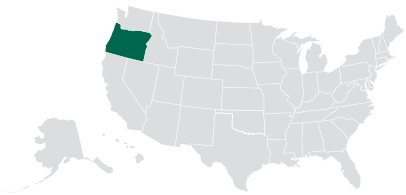
- **FY09** Fielded through the Rapid Fielding Initiative (RFI) and was an interim solution until the Flame Resistant Environmental Ensemble (FREE) was procured

PROJECTED ACTIVITIES

- **FY10–11** Transition from fielding AEF to FREE via RFI

CONTRACTORS

Massif Mountain Gear Co. (Ashland, OR)
SNC Manufacturing (Caguas, PR)



Generation III Extended Cold Weather Clothing System (GEN III ECWCS)

MISSION

Provides Soldiers a multi-layered, versatile insulating system that is adaptable to varying operational and environmental conditions.

The multi-layered insulating system of the **Generation III Extended Cold Weather Clothing System (GEN III ECWCS)** allows the Soldier to adapt to varying mission requirements and environmental conditions. Materials offer a greater range of breathability and environmental protection, providing greater versatility in meeting Soldiers' needs.

GEN III ECWCS utilizes an innovative design that reduces bulk, taking up 33 percent less space, and weighing 25 percent less than its predecessor systems. Each piece of GEN III ECWCS functions either alone or in concert with other components as a system, thus providing more options for the Soldier and enabling seamless integration with load-bearing equipment and body armor configurations. The Gen III ECWCS design allows moisture to escape and at the same time has water-resistant properties.

GEN III ECWCS is a 12-piece kit that enables Soldiers to utilize seven different layers, depending on the mission and environment. The system functions through insulation, which resists the transmission of heat, traps air, and wicks moisture away from the body; layering, which increases air space and allows easy adjustment to a Soldier's activity level; and ventilation, which allows moisture to escape. By mixing and matching Gen III ECWCS components, Soldiers can protect themselves from temperatures ranging from 40 degrees Fahrenheit to minus 60 degrees.

PROGRAM STATUS

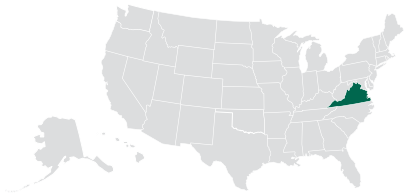
- **4QFY08** Began sustainment transition to Defense Logistics Agency-Troop Support
- **4QFY08** Fielded to deploying Soldiers
- **FY09–12** Fielded to deploying Soldiers via Rapid Fielding Initiative (RFI)

PROJECTED ACTIVITIES

- **FY12-13** Continue to field via RFI
- **FY12** Full sustainment with Defense Logistics Agency-Troop Support

CONTRACTORS

Atlantic Dive Supply (ADS) (Virginia Beach, VA)



Lightweight Cold Weather Undershirt/Drawers

Midweight Cold Weather Shirt/Drawers

Fleece Cold Weather Jacket

Wind Cold Weather Jacket

Soft Shell Cold Weather Jacket and Trousers

Extreme Cold/Wet Weather Jacket and Trousers

Extreme Cold Weather Parka/Trousers

Army Combat Boot (Temperate Weather)

MISSION

Provides combat personnel with environmental and camouflage foot protection in a variety of battlespace environments.

The **Army Combat Boot (Temperate Weather)** is a tan-colored, temperate weather combat boot with a moisture-resistant, rough-side-out cattlehide leather and nylon duck upper. It contains a waterproof breathable membrane and integrated safety features such as limited flame, conductive heat, and liquid fuel penetration protection. The sole consists of a three-layer, shock-absorbing soling system with an abrasion- and slip-resistant solid rubber outsole. It has a combination eyelet and speed-lace lacing system.

PROGRAM STATUS

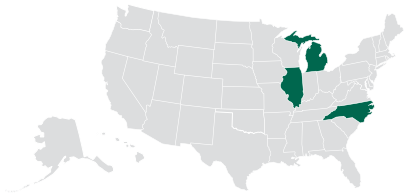
- ✔ Available by requisition; one pair issued as part of initial issue Clothing Bag effective October 2004. The Army Combat Boot (Temperate Weather) is a required possession item (one pair) for all Soldiers under AR 670-1
- ✔ **FY10–11** Integration of "direct attach" soling system

PROJECTED ACTIVITIES

- \+ None

CONTRACTORS

Bates Uniform Footwear (Grand Rapids, MI)
Belleville Shoe Manufacturing Co. (Belleville, IL)
McRae Industries Inc. (Mt. Gilead, NC)



Cold (Wet and Dry) Weather and Specialty Boots

MISSION

Provides the Soldier with environmental foot protection suitable for wet and dry cold weather conditions.

The **Extreme Cold Weather Boot (ECWB)** protects feet in dry-cold conditions between 60 degrees Fahrenheit and minus 20 degrees. Boots are white and have six pairs of eyelets and insulation consisting of three layers of needle-punched polyester foam hermetically sealed within an outer and inner layer of rubber. The boot has a pressure-release valve to adjust internal air pressure in the boot during high-altitude operations.

The **Intermediate Cold Wet Boot with Removable Liner (ICWB w/RL)** is a tan, cold-wet weather combat boot with a moisture-resistant, rough-side-out cattlehide leather upper measuring 10 inches in height. Boots are worn in cold, wet environments where the mean monthly temperature ranges between 14 and 32 degrees Fahrenheit. This boot contains a waterproof breathable membrane and is issued with two pairs of insulated removable booties. It has a shock-attenuating soling system with a slip- and abrasion-resistant rubber outsole. It has a combination eyelet and speed-lace lacing system.

The **Modular Boot System (MBS)** is a multifunctional, multi-theater footwear system that will afford the Soldier environmental protection and added capability in environmental conditions ranging from minus 20 to 110 degrees Fahrenheit. It is a developmental program designed to replace the current Army Combat Boot (Hot Weather), Army Combat Boot (Temperate Weather), ICWB w/RL and black Cold Weather Boot, which has already been phased out.

The **Mountain Combat Boot (MCB)** is a durable, hiking-style mountain combat boot designed to provide a combat-effective boot with the ankle stability, support, and mobility required in a rugged mountainous environment.

PROGRAM STATUS

- ECWB and ICWB w/RL in sustainment and available by requisition
- **2QFY12** MBS Milestone C
- **FY11** MCB issued (2 pairs each) to selected Soldiers deploying in support of Operation Enduring Freedom

PROJECTED ACTIVITIES

- No further development planed for ECWB, MBS, and ICWB w/RL; ICWB w/RL is expected to be replaced by the MBS
- **2QFY12** MCB Milestone C

Intermediate Cold Wet Boot with Removable Liner (ICWB w/RL)

Extreme Cold Weather Boot (ECWB)

CONTRACTORS

ECWB

Norcross Safety Products/Honeywell (Rock Island, IL)

ICWB w/RL

Belleville Shoe Manufacturing Co. (Belleville, IL)

Wellco Enterprises Inc. (Waynesville, NC)

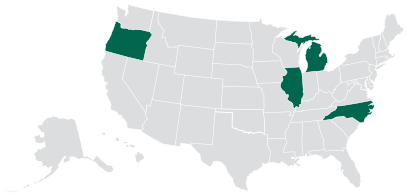
MBS

TBD

MCB

Danner Inc. (Portland, OR)

Bates (Rochford, MI)



Mountain Combat Boot (MCB)

Modular Boot System (MBS)

Hot (Wet and Dry) Weather Boots

MISSION

Provides the Soldier with environmental and camouflage protection in wet and dry hot weather battlespace environments.

The **Army Combat Boot (Hot Weather) [ACB (HW)]** is a tan-colored, hot weather combat boot made with moisture-resistant, rough-side-out cattlehide leather and nylon duck upper with two drainage eyelets on the inner arch. The soling system of this boot consists of a three-layer, shock-absorbing soling system with an abrasion-resistant outsole. It has a combination eyelet and speed-lace lacing system.

The **Army Combat Boot (Hot Weather-Flame Resistant) [ACB (HW-FR)]** is a tan-colored, flame- and conductive heat-resistant hot weather combat boot made with moisture-resistant, rough-side-out cattlehide leather and fabric upper designed for U.S. Army flight personnel and combat vehicle crewmen. The soling system of this boot consists of a three-layer, shock-absorbing soling system with a solid rubber, abrasion-resistant outsole. It has a combination eyelet and speed-lace lacing system.

The **Army Combat Boot (Hot Weather-Safety Toe) [ACB (HW-ST)]** is the safety toe version of the ACB (HW). It is a tan-colored, hot weather combat boot made with moisture-resistant, rough-side-out cattlehide leather and nylon duck upper. The sole of this boot consists of a three-layer, shock absorbing soling system with an abrasion-resistant solid rubber outsole. It has a combination eyelet and speed-lace lacing system and contains an ASTM F13-compliant steel toe.

PROGRAM STATUS

- **FY08** ACB (HW) Available by requisition; the ACB (HW) is a required possession item (one pair) for all Soldiers under AR 670-1
- **FY10** ACB (HW-FR) available through Defense Logistics Agency-Troop Support
- **FY10** ACB (HW-ST) in sustainment and available by requisition
- **FY10** ACB (HW-FR) fielded to deploying Soldiers via Rapid Fielding Initiative
- **FY10–11** ACB (HW) integration of "direct attach" soling system

PROJECTED ACTIVITIES

- **FY12** (HW-FR) in sustainment and available by requisition

Army Combat Boot (Hot Weather) [ACB (HW)]

CONTRACTORS

ACB (HW)

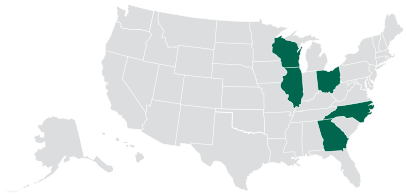
Altama Footwear (Atlanta, GA)
Belleville Shoe Manufacturing Co. (Belleville, IL)
McRae Industries Inc. (Mt. Gilead, NC)
Wellco Enterprises Inc. (Waynesville, NC)
Rocky Boot (Nelsonville, OH)

ACB (HW-FR)

Belleville Shoe Manufacturing Co. (Belleville, IL)

ACB (HW-ST)

Weinbrenner Shoe Company Inc. (Merrill, WI)



Army Combat Boot (Hot Weather-Flame Resistant) [ACB (HW-FR)]

Intermediate Cold Wet Glove (ICWG)

MISSION

Protects Soldiers' hands in intermediate environmental conditions.

The waterproof **Intermediate Cold Wet Glove (ICWG)** protects hands in temperatures from approximately 0 to 40 degrees Fahrenheit. The recently improved ICWG now features less bulky insulation in the trigger finger to increase dexterity. The new glove has eliminated the flexor design and has a waterproof/breathable membrane. The ICWG can be worn alone or over lightweight inserts.

PROGRAM STATUS

- **FY09** In sustainment and available for requisition at Defense Logistics Agency-Troop Support

PROJECTED ACTIVITIES

- **FY12** Researching product improvement materials

CONTRACTORS

To be determined

Gloves, Cold Weather

MISSION

Provides the Soldier with full cold weather hand protection and camouflage for wet and dry environments.

Intermediate Cold Weather (ICW) Flyer's Gloves are designed to protect against cold weather. Nomex flame-resistant knit fabric protects the back of the hand and black sheepskin leather protects the inside of the hand from palm to fingertips.

Extreme Cold Weather (ECW) Mitten Set is worn over other handwear to provide extra protection in extremely cold climates. In situations requiring dexterity where the mittens must be temporarily removed, the Soldier can easily secure the mittens with the included suspension harness. The ECW Mitten Set includes the outer shells, removable insulation, and a cotton tape and cotton braid suspension harness. The outer shells of the mitten set are made of wind-resistant and water-repellent cotton/nylon blend, have deerskin leather palms, and have wool pile material on the backs of the hands. The removable insulating liner is made of polyester batting with a lightweight ripstop nylon cover fabric. The mittens have a long gauntlet with adjustable closure straps across the top of the wrist and the top of the gauntlet.

Cold Weather Trigger Finger (TF) Mitten Shells are worn in temperatures too cold for five finger gloves and provide added dexterity over the ECW mitten by having trigger fingers. The shell is a wind-resistant and water-repellent cotton/nylon blend with leather palms, thumb compartments, trigger finger and combined second, third, and fourth finger compartments. The mitten shells have long gauntlets with elastic around the top, a tape loop at the top for attaching a suspension cord, and an adjustable closure strap on the back across the wrist. The mitten shells have insulation across the backs of the hand and around the fingers. The TF Mitten Shells can be worn with or without the **Cold Weather Trigger Finger Mitten Inserts**.

PROGRAM STATUS

- ✓ **FY09** In sustainment and available for requisition

PROJECTED ACTIVITIES

- \+ **FY12** Researching product improvement materials and fit

CONTRACTORS

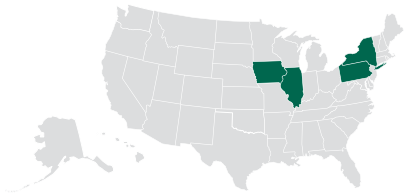
ICW Flyer's Glove
Ansell Hawkeye Inc. (Fort Dodge, IA)
Nationwide Glove Co. Inc. (Harrisburg, IL)

ECW Mitten Set
Propper International (Mayaguez, PR)

Snow Camouflage White Mitten Shells
Propper International (Mayaguez, PR)

CW Trigger Finger Mitten Shells
Ansell Hawkeye Inc. (Fort Dodge, IA)
Propper International (Mayaguez, PR)
Hercules Glove Manufacturing (Rochester, NY)

CW Trigger Finger Mitten Inserts
Indogem Inc. (Allentown, PA)



Cold Weather Trigger Finger (TF) Mitten Inserts

Snow Camouflage White Mitten Shells

Extreme Cold Weather (ECW) Mitten Set

Caption Text

Gloves, Temperate and Hot Weather

MISSION

Protects the Soldier's hands while moving objects, navigating rough terrain, and during mission operations.

The **Combat Glove** is flame-resistant para- and meta-aramid which contains conductive anti-static fiber. The glove is form fitting, offering maximum dexterity, tactility, flexibility, flame resistance, and cut protection. The leather palm is made from goat/kidskin. Thread materials are 100 percent flame-resistant para-aramid. The gloves can be laundered without losing their protective properties.

The **Combat Vehicle Crewman's (CVC) Glove** and the **Summer Flyer's Glove** are lightweight, unlined cloth and leather gloves. The CVC Glove is made of flame-resistant Simplex knit Nomex and has leather palms made of water-resistant cattlehide or horsehide. The Summer Flyer's Glove is made of flame-resistant Simplex knit Nomex with palms made of water-resistant hairsheep leather. Both gloves can be laundered without losing their flame resistance properties.

PROGRAM STATUS

- ✓ **FY09** Fielded combat gloves through Rapid Fielding Initiative
- ✓ **FY11** New Combat Glove glove design included:
  - Leather extended to increase durability of finger seams
  - Knuckle patch reinforced for increased strength
  - Trigger finger is a continuous leather wrap around design for durability
  - Thumb crotch patch is 100% leather for durability

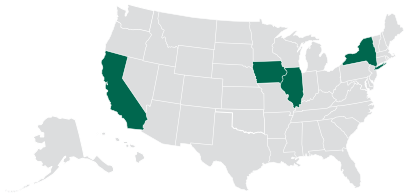
PROJECTED ACTIVITIES

- + **FY12** Sustainment via Defense Logistics Agency Troop Support
- + **FY12** Thread abrasion testing
- + **FY12** Seam break strength testing
- + **FY13** Flexing hand durability test

CONTRACTORS

Combat Glove
HWI Gear Inc. (Ojai, CA)

CVC Gloves, Flyer's Gloves
Ansell Hawkeye Inc. (Fort Dodge, IA)
Hercules Glove Manufacturing (Rochester, NY)
Nationwide Glove Co. Inc. (Harrisburg, IL)



Summer Flyer's Glove

Combat Vehicle Crewman's (CVC) Glove

Combat Glove

Gloves, Utility

MISSION

Protects the Soldier's hands in a variety of potentially dangerous situations and settings.

Barbed Wire Handlers' Gloves protect the Soldier's hands when they must handle barbed tape, barbed wire, razor wire, and other similar materials. The gloves have a four-finger-and-thumb Clute design with a 5-inch gauntlet. The gloves are made of split-leather cowhide. Additionally the leather palms are lined with cotton flannel and the gauntlet areas are lined with cotton duck. The palms and the insides of the fingers and thumbs are reinforced with leather strips stapled one-quarter of an inch apart.

Men's and Women's Heavy Duty Gloves are Gunn-cut cowhide or horsehide gloves and are intended for heavy work. The gloves have continuous thumbs with leather welts inserted in the thumb seams. The seams at the base of the fingers also include a reinforcing leather welt, which is upturned to cover the stitching. An additional layer of leather reinforces the palms. The gloves have an adjustable strap and buckle on the back.

Light Duty Utility Gloves (LDUG) are multifunctional but best suited for light work. The March 2008 redesign improved Soldier dexterity, tactility, and comfort by reducing the number of seams in the fingers, and the newer three-dimensional shape gives the gloves less bulk.

Fuel Handlers' Gloves (FHG) protect against kerosene-based fuels. The gloves are made of Nomex Simplex knit with leather palms, and are liquid-proof and flame-resistant, providing fuel handlers with maximized protection, performance, and comfort. The gloves have full Gore-Tex® direct grip glove inserts for protection against the fuels. The glove insert also makes this glove waterproof.

PROGRAM STATUS

- ✔ **3QFY10** Field tested new Barbed Wire Handlers' Gloves design
- ✔ Men's and Women's Heavy Duty Gloves: Items in sustainment; no further development planned
- ✔ **1QFY10** Light Duty Utility Glove in Clothing Bag
- ✔ FHG: Items in sustainment; no further development planned

PROJECTED ACTIVITIES

+ To be determined

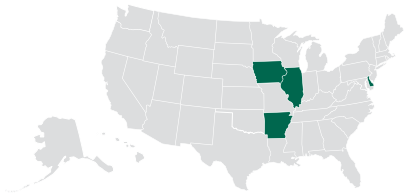
CONTRACTORS

Barbed Wire Handlers' Gloves
Ansell Hawkeye Inc. (Fort Dodge, IA)
The Glove Corp. (Heber Springs, AR)

Men's and Women's Heavy Duty Gloves
Nationwide Glove Co. Inc. (Harrisburg, IL)
Ansell Hawkeye Inc. (Fort Dodge, IA)

Light Duty Work Gloves/Utility Gloves
Nationwide Glove Co. Inc. (Harrisburg, IL)

Fuel Handlers' Gloves (FHG)
Masley Enterprises Inc. (Wilmington, DE)
Ansell Hawkeye Inc. (Fort Dodge, IA)



LIght Duty Utility Gloves (LDUG)

Men's and Women's Heavy Duty Gloves

Fuel Handler's Gloves (FHG)

Barbed Wire Handlers' Gloves

Utility Uniforms and Accessories

MISSION

Improves Soldier comfort with climate-appropriate utility uniforms and accessories that function as combat clothing or duty uniforms.

The **Improved Boot Sock** is over-the-calf style, with a double-welt top and a double-covered elastic yarn that is continuous from the welt top to the ankle area. The fully reciprocal heel, toe, and foot area is padded with a half-cushion terry for blister protection. The entire ankle, heel, toe, and foot is knit 360 degrees with a main body yarn (terry yarn) and a silver-coated nylon yarn knit in the same position. The nylon yarn is permanently coated with 99.9 percent pure silver, is non-allergenic and antimicrobial, and provides protection against bacteria and fungi.

The **Insect Net** and **Insect Hat** are worn in tropical and semitropical areas when helmets are not worn. The hat has a soft crown and stitched brim, chin strap, and camouflage band. The net attaches to the hat by an elastic cord with two loops at the bottom to fasten buttons.

The **Fleece Cap** is foliage green, synthetic microfleece, and is 100 percent polyester; its bell-shape and pull-on style provide increased comfort and durability.

The **Hat, Sun Hot Weather (Boonie Hat)** has a soft crown, a standard-width quilted stitched brim, a chinstrap, and a camouflage band. The cloth is ripstop poplin, 50/50 percent cotton/nylon, and is Type III water-repellent. The hat comes in the Universal Camouflage Pattern and Operation Enduring Freedom Camouflage Pattern.

The **Rigger Belt** is a desert sand belt made of nylon rigger webbing and a parachute buckle. The belt offers increased comfort, durability, and functionality.

The **Sock Liner, Dress Sock** is a dual-purpose item worn by the male and female Soldier under all types of boot socks to prevent blisters. It can also be worn as a dress sock with black dress shoes. The socks are made of cotton yarn plied with stretch nylon yarn.

The **Brown Bath Towel** is issued in Soldiers' Clothing Bags for use in garrison and field environments. The terry cloth fabric is 70 percent polyester and 30 percent cotton. The towel is 20 inches by 40 inches.

Knee and Elbow Pads (KEP) provide dismounted Soldiers with protection for knees and elbows while engaged in tasks that subject these areas to possible injury or discomfort caused by impact, pressure, or protruding objects and debris (e.g., rocks, gravel, or glass).

PROGRAM STATUS

- ✓ All items in sustainment
- ✓ **FY08** Developed and evaluated an improved towel; improvements included increased absorption, reduced bulkiness and weight, and faster drying
- ✓ **FY08** Developed and evaluated improved sock liner; improvements included better moisture vapor transmission, anti-microbial treatment, and improved comfort
- ✓ **FY09** Completed development of a domestic-source towel and conducted a user evaluation of the improved towel
- ✓ **FY09** Conducted a user evaluation of an improved sock liner

PROJECTED ACTIVITIES

- \+ **FY12** Include washcloths in Clothing Bag

CONTRACTORS

Boot Sock

Special T Hosiery Mills (Burlington, NC)

Pickett Hosiery Mills (Burlington, NC)

Insect Hat and Insect Net

Sandina Enterprises (Brooklyn, NY)

Fleece Cap

Seneca-Cayuga Counties Chapter, NYSARC Inc. (Waterloo, NY)

Hat, Sun Hot Weather (Boonie Hat)

Bernard Cap Co. (Hialeah, FL); M&B Headwear (Richmond, VA)

Rigger Belt

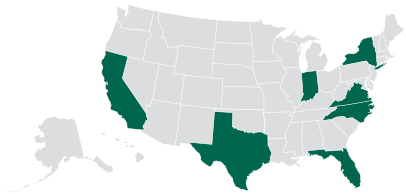
Travis Association for the Blind (Austin, TX)

Brown Bath Towel

UNICOR (Terre Haute, IN)

KEP

Bijan Protective Equipment (Santa Rosa, CA)



Fleece Cap

Hat, Sun Hot Weather (Boonie Hat)

Improved Boot Sock

Knee and Elbow Pads

Rigger Belt

Brown Bath Towel

Modular Lightweight Load-carrying Equipment (MOLLE)

MISSION

Enables the Soldier to tailor individual loads to meet mission needs with modular, flexible, load-carrying equipment.

The **Modular Lightweight Load-carrying Equipment (MOLLE)** system consists of several modular components that allow the Soldier to carry tactical combat gear in the most effective manner for lethality and survivability on the battlefield. The modularity of the system allows the Soldier's load to be set. It consists of a fighting load carrier that attaches to releasable body armor known as the Tactical Assault Panel (TAP). The TAP has permanent pockets for six magazines, an MBITR radio, or a DAGR handheld GPS. The webbing on the front of the TAP allows for attachment of any MOLLE pouch that a Soldier's kit may need. The Rifleman Set also includes the 2000 cubic inch Assault Pack for short missions and various MOLLE pouches. Other specialty sets include the Grenadier, Squad Automatic Weapon (SAW), Pistolman, and Medic sets. The MOLLE Medium Ruck set consists of a 3000 cubic inch rucksack designed with a suspension that is compatible with the rear ballistic plate of body armor. The Medium Ruck Is designed to transport a Soldier's mission essential gear for up to a 72 hour mission. A Large Ruck set consists of the 4000 cubic inch MOLLE Large Rucksack which carries the Soldier's sustainment load over long duration missions.

MOLLE was designed to replace the All-purpose Lightweight Individual Carrying Equipment and Integrated Individual Fighting System.

PROGRAM STATUS

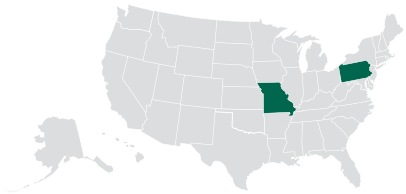
- ✔ **FY10** Fielded to deploying Soldiers via Rapid Fielding Initiative (RFI)
- ✔ **FY10** Completed the Tactical Assault Panel and Medium Rucksack as product improvements
- ✔ **FY11** Fielded MOLLE in the OEF Camouflage Pattern (OCP) to Soldiers deploying to Afghanistan

PROJECTED ACTIVITIES

- \+ **FY12** Completely transition MOLLE sustainment to defense Logistics Agency-Troop Support
- \+ **FY12** Ongoing product improvements such as Improved MOLLE Medic set

CONTRACTORS

BAE Systems (Jessup, PA)
Eagle Industries/ATK (Fenton, MO)



Load Carriage-Related Equipment

MISSION

Enables Soldiers to carry mission-essential equipment with minimal effect on mobility and survivability.

The **Entrenching Tool (E-Tool)**, a "D" handled shovel, has a collapsible feature that makes it easily transportable.

The **Mattock**, a supplement to the E-Tool, has a 24-inch wooden handle and a 12-inch steel head with mattock and axe blades. It can be used to cut tree roots and limbs, break rock, and loosen ground.

The **Equipment Belt Extender (EBE)**, a 4-inch equipment belt, has triple layers of 2.25-inch wide webbing with 2.25-inch side-release buckles sewn on each end.

The Field Case is designed to hold a first aid kit or compass. It attaches to an equipment belt or suspenders with a slide keeper.

The **Mounted Crewman Compartmented Equipment Bag (MCCEB)** is a compartmentalized bag designed to organize and carry the load of mounted crewman. The bag's three compartments have zippered openings with secured flaps, and the bag's shoulder straps allow for easy transport.

PROGRAM STATUS

- ✔ All items in sustainment and available for requisition

PROJECTED ACTIVITIES

- \+ All items in sustainment and available for requisition

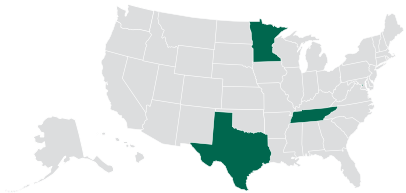
CONTRACTORS

E-Tool
Ames True Temper (Prior Lake, MN)

Mattock
General Services Administration Global Supply (Washington, DC)

EBE
Lions Volunteer Blind Industries (Morristown, TN)

MCCEB
Reyes (San Antonio, TX)



Field Case

Equipment Belt Extender (EBE)

Individual Soldier Hydration

MISSION

Provides the Soldier with a portable means of water carriage and hydration purification.

The **One-Quart Canteen**, a rigid plastic container, interfaces with the drinking tube of the chemical-biological protective mask via the nuclear, biological and chemical (NBC) cap, allowing Soldiers to drink from the canteen without removing their masks. The cover has an outer pocket for water purification tablets and attaches to the Soldier's equipment belt or load-carrying equipment.

The **Two-Quart Collapsible Canteen**, a flexible plastic container, interfaces with the drinking tube of the chemical-biological protective mask via the NBC cap, allowing Soldiers to drink without removing their masks. The canteen cover has an outer pocket for water purification tablets. The canteen can be carried over the shoulder using a strap or can be attached to the Soldier's equipment belt or load-carrying equipment. It collapses when drained for less bulk.

The **Cold Weather Canteen System**, a one-liter stainless steel canteen with insulated carrier, ensures sufficient Soldier hydration during operations in extremely cold environments (minus 40 degrees Fahrenheit). The system interfaces with the drinking tube of the chemical-biological protective mask using a cap adapter/mouthpiece of low thermal conductive material. The insulated carrier is designed to attach to the Soldier's equipment belt or load-carrying equipment.

The **Modular Lightweight Load-carrying Equipment (MOLLE) Hydration System**, an ergonomically designed water bladder with carrier, can be worn individually or integrated with load-bearing equipment or web harness systems. The bladder includes a drink tube with bite valve, a positive shut-off, and an exterior fill port. The MOLLE Hydration System is non-CBRN compatible. The carrier is made of abrasion-resistant 1000D Cordura™ nylon, has a sternum strap for added stability, and has a handle for filling on the go.

The **Multi-Purpose Personal Hydration System (MPHS)**, a CBRN hardened water bladder and carrier with identical specifications to the MOLLE Hydration System. The MPHS can be worn individually or integrated with load-bearing equipment or web harness systems. The bladder includes a drink tube with bite valve, a connection to the M-40 and M-50 series of protective masks, a positive shut-off, and an exterior fill port. The carrier is identical to the MOLLE Hydration System, made of abrasion-resistant 1000D Cordure nylon, has a sternum strap for added stability, and has a handle for filling on the go.

Individual Water Treatment Device (IWTD), an in-line capability that will provide Soldiers the capability to microbiologically purify local water sources, reducing their need to carry sufficient quantities of water to sustain them during missions when bulk/bottled water is not available. The system will be compatible with current and future hydration systems.

PROGRAM STATUS

- ✔ One-Quart Canteen, Two-Quart Collapsible Canteen, Cold Weather Canteen System and MOLLE Hydration System are in sustainment

PROJECTED ACTIVITIES

- \+ **FY11-FY12** Requirements documentation prepared/approved for a Material Development Decision for MPHS and IWTD
- \+ **FY11-FY12** Continue Small Business Innovative Research (SBIR) program efforts to identify novel in-line water purification/filtration devices, and desalination technologies

CONTRACTORS

One-Quart Canteen
Seattle Lighthouse for the Blind (Seattle, WA)

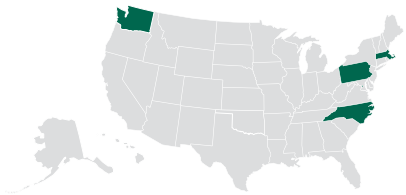
One-Quart Canteen Cover
Federal Prison Industries (Washington, DC)

Two-Quart Collapsible Canteen
Seattle Lighthouse for the Blind (Seattle, WA)

Two-Quart Canteen Cover
Federal Prison Industries (Washington, DC)

Cold Weather (Insulated) Canteen
General Dynamics Armament and Technical Products Inc. (Charlotte, NC)

MOLLE Hydration System
BAE Systems (Jessup, PA)
Eagle Industries (New Bedford, MA)



Modular Lightweight Load-carrying Equipment (MOLLE) Hydration System

One-Quart Canteen

Two-Quart Collapsible Canteen

Cold Weather Canteen System

Family of Flashlights (FoF)

MISSION

Provides the Soldier with a complete illumination capability package that will replace the MX-991/U L shaped flashlight.

The **Family of Flashlights (FoF)** consists of a **Hands-Free Helmet-Mounted Light (HFHL)** that is capable of being attached to both the Advanced Combat Helmet and the Modular Lightweight Load-carrying Equipment (MOLLE) or the Interceptor Body Armor (IBA); a **Handheld Tactical Light (HHTL)**; a **Weapon Mountable Light/ Illuminator (WML)**; and a **Crew Served Weapons Light (CSWL)**. The focus of the FoF is to provide an increased illumination capability that is highly effective and more reliable than present lights or illuminators. The FoF fills a current capability gap by providing lighter, more versatile, and more durable, multifunctional lights that feature increased range and better power management, providing Soldiers with a complete illumination capability package that accommodates and supports a wide variety of roles.

The Soldier Enhancement Program (SEP) Executive Council recognized the need to improve the Soldier's illumination capabilities and approved the FoF as a SEP new start program in February 2005. The FoF improves the Soldier's ability to illuminate the battlefield, complete tasks, and perform a myriad of duties. The FoF will also improve the Soldier's ability to read maps, perform first aid and maintenance duties, traverse/navigate over terrain, signal, conduct searches, control crowd access points during the conduct of escalation of force, and perform target identification and target engagement tasks. The future variants of the FoF will considerably enhance the Soldiers' tactical advantage, survivability, and mobility.

PROGRAM STATUS

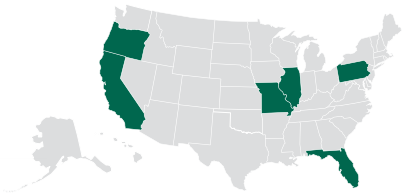
- ✓ **2QFY08–2QFY09** Product evaluation tests for HFHL, HHTL, WML and CSWL conducted at Aberdeen Test Center
- ✓ **4QFY09** Capability Production Document approved

PROJECTED ACTIVITIES

- \+ **FY12** Maintain current approved list
- \+ **FY12** Seek funding

CONTRACTORS

SureFire (Fountain Valley, CA)
Energizer Holdings Inc. (St. Louis, MO)
First-Light USA (Seymour, IL)
Streamlight (Eagleville, PA)
Phantom Products Inc. (Rockledge, FL)
Gerber Legendary Blades (Portland, OR)
NovaTac Inc. (Carlsbad, CA)



Sleep Systems

MISSION

Provides combat personnel with modular-concept sleep equipment, enhancing Soldier comfort in diverse environmental conditions.

The **Modular Sleep System (MSS)** is a bag-within-a-bag. The MSS consists of a camouflaged, waterproof, breathable bivy cover, a lightweight patrol sleeping bag, and an intermediate cold weather sleeping bag. Compression sacks are included to store and carry the system. The MSS is available in colors compatible with the Universal Camouflage Pattern. The patrol bag provides cold weather protection from 35 to 50 degrees Fahrenheit. The intermediate bag provides cold weather protection from minus 5 to 35 degrees Fahrenheit. Together, the patrol bag and intermediate bags provide extreme cold weather protection in temperatures as low as minus 30 degrees Fahrenheit. The bivy cover can be used with each of three MSS configurations (patrol, intermediate, or combined) to be compatible with the environment in which the system is being used; the bivy cover provides environmental protection from wind and water. Sleeping bags are made of ripstop nylon fabrics and continuous filament polyester insulation; camouflage bivy cover is made with waterproof, breathable, coated or laminated nylon fabric; the compression sacks are made with water-resistant, durable nylon fabric.

The **Sleeping Mat** is a foliage green, closed-cell polyethylene foam pad. Two permanently attached straps secure the mat when in a rolled configuration for carrying. The mat is used as a ground insulator under the MSS to provide insulation from cold ground.

The **Self-Inflating Sleeping Mat** is used in the same manner as the sleeping mat, but has an open cell foam core sandwiched between, and laminated to, a foliage green, air-impermeable, coated nylon fabric with a plastic valve in one corner. Once unrolled, the air valve is opened, allowing air to enter the mat as the foam expands. The air valve is then closed to maintain the expanded mattress during use and later reopened to expel the air during rolling for carry and storage.

PROGRAM STATUS

- ✔ All items in sustainment available by requisition from the Defense Logistics Agency Troop Support
- ✔ Fielded via the Rapid Fielding Initiative

PROJECTED ACTIVITIES

- \+ **FY12** Sustainment of MSS with recent upgrades

CONTRACTORS

MSS (Sleeping Bags and Bivy Cover)

Tennier Industries Inc. (Pomona, NY)

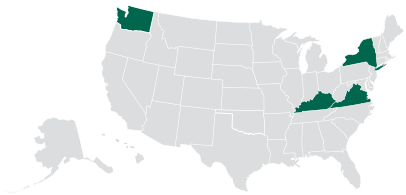
Sleeping Mat

National Institute for the Severely Handicapped Inc. (Vienna, VA)

Pioneer Vocational Industrial Services (Danville, KY)

Self Inflating Sleeping Mat

Cascade Designs Inc. (Seattle, WA)



Self-Inflating Sleeping Mat

Sleeping Mat

Modular Sleep System (MSS)

Improved Camouflage Face Paint

MISSION

Provides camouflage solutions for the Soldier in the visible and near-infrared regions of the electromagnetic spectrum, as well as protection against thermal imagers and insects.

Camouflage Face Paint (CFP) is used on all exposed skin to provide passive camouflage protection in the visible and near-infrared regions of the electromagnetic spectrum, as well as protection against thermal imagers, which operate in the mid- and far-infrared regions of the spectrum. The current camouflage compact is a cosmetic-like container with an acrylic mirror and compartments containing four colors. The improved camouflage container will consist of two sticks of two colors each; one with a DEET additive and one without.

PROGRAM STATUS

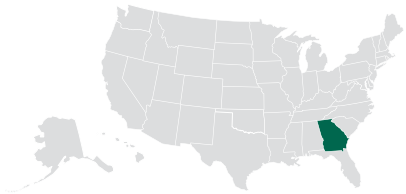
- ✓ **2QFY08** Hot and cold weather chamber evaluation completed
- ✓ **2QFY08** Soldier evaluation at Camp Bullis, TX, confirmed new design
- ✓ **4QFY08** Conducted large-scale user assessment of camouflage sticks, with and without DEET, in final configuration

PROJECTED ACTIVITIES

- \+ **FY12** Turn over to Defense Logistics Agency Aviation for sustainment

CONTRACTORS

Iguana LLC (Thomasville, GA)



Ghillie Suit Accessory Kit (GSAK) Upgrade

MISSION

Offers the Soldier improved protection from flame and thermal threats, as well as counter climate protection, and enhanced comfort.

The **Ghillie Suit Accessory Kit (GSAK)** Upgrade provides surveillance units and snipers with various camouflage multifunctional materials to construct, repair, and modify Ghillie Suits to meet unique mission and climatic requirements. The upgrade kit consists of 18 items, including universal netting, over whites, flame-resistant jute, nylon cord, sewing kit, camo-pack, zip ties, dye packs, seam grip, Cordura™, nylon webbing, Fas-tex fasteners, gun sleeve, hook and loop, and suspenders that are used to fabricate and maintain one Ghillie Suit. The GSAK upgrade affords the Soldier enhanced agility, multi-system operability, and anti-odor/anti-microbial properties.

PROGRAM STATUS

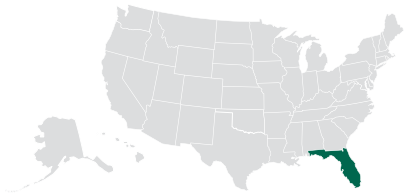
- **4QFY07–2QFY08** Acquired, tested, and evaluated commercial flame-resistant GSAK
- **3QFY08–4QFY08** Conducted follow-on user assessment with the Sniper School at Fort Benning, GA
- **4QFY08** The Army modified the existing GSAK specification to include the new components
- **4QFY09** Upgraded GSAK supply requirements package provided to Defense Supply Center Philadelphia (DSCP) for phase-in
- **FY10** Transition to Defense Logistics Agency Troop Support, formerly DSCP, for sustainment

PROJECTED ACTIVITIES

+ In sustainment

CONTRACTORS

Source One Distributors (Wellington, FL)



Lightweight Performance Hood (LPH)

MISSION

Offers the Soldier improved protection from flame and thermal threats, as well as counter-surveillance protection, increased multi-climate protection, and enhanced comfort.

The **Lightweight Performance Hood (LPH)** is a flame-resistant, no-melt, no-drip head and face covering that provides the Soldier with protection from thermal threats and minimizes heat stress in hot-dry climates while providing limited heat retention in cool climates. It is a one-size-fits-all item featuring a ventilated mesh top to minimize heat stress beneath the Advanced Combat Helmet. The LPH is anti-microbial, anti-odor, and moisture wicking, and replaces the Combat Vehicle Crewman Hood and Anti-Flash Hood. It is being issued at a rate of two per Soldier.

PROGRAM STATUS

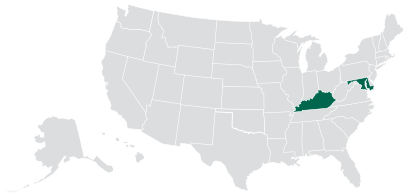
- **2QFY09** Began issuing two per deploying Soldier
- **3QFY09** Placed on the Federal Procurement List (FPL)
- **3QFY09** Placed requisition against the FPL for fielding quantities
- **4QFY09** Supply Request Package/ Technology Deployment Package
- **1QFY10** Placed on Army Direct Ordering
- **FY10** Transition to sustainment

PROJECTED ACTIVITIES

+ In sustainment

CONTRACTORS

Elite Issue (Baltimore, MD)
Southeastern Kentucky Rehabilitation Industries (Corbin, KY)



HIGGIN

Chemical Protective Clothing

MISSION

Protects the Soldier from chemical and biological (CB) contamination during battle and other mission operations.

The **Chemical Protective Undergarment (CPU)** is a two-piece "form-fitting" design worn under the combat vehicle crewman (CVC) or aviator uniform. When worn with a new duty uniform, the system will provide 12 hours of liquid and vapor protection from chemical agents. The CPU is snug-fitting and air permeable. The CPU is also worn with the Toxicological Agent Protective Ensemble by Department of the Army civilians who are engaged in routine surveillance, demilitarization, and destruction of chemical agents inside the United States. In addition to the shirt and drawers worn by CVC, Army civilians wear socks and gloves made from the same material to provide enhanced protection.

The **U.S. Army Firefighter's Integrated Suit-Combat (FIS-C)** protects military firefighters in accordance with National Fire Protection Association standards and provides CB protection during firefighting. The FIS-C consists of proximity coat, proximity trousers, gloves, helmet, standard firefighting boots, Nomex balaclava, self-contained breathing apparatus with chemical kit, Joint Service Lightweight Integrated Suit Technology (JSLIST) overgarment, CB gloves/liners, and carrying bag.

The **Suit, Contamination Avoidance, Liquid Protective (SCALP)** is an impermeable, lightweight, inexpensive disposable ensemble that provides supplemental protection when worn over standard chemical protective garments. SCALP consists of a jacket, trousers, and two footwear covers worn over the chemical protective overgarment and overboots. All components provide protection from liquid contamination for up to one hour.

The **Joint Service Lightweight Integrated Suit Technology (JSLIST)** ensemble is the first DoD managed CB protection overgarment. The JSLIST is a two-piece garment worn over the standard duty uniform with butyl rubber gloves, Black Vinyl Overshoes or Alternative Footwear System overboot and the M40 or M50 chemical protective mask. The JSLIST provides the Soldier with 24 hours of chemical protection in a contaminated environment after 45 days of wear and six launderings.

The **Joint Service Lightweight Integrated Suit Technology (JSLIST)** Chemical Biological Coverall for combat vehicle crewmen (JC3) provides CB protection for CVC. The JC3 is a one-piece coverall and is intended to provide petroleum, oil and lubricant, and flame resistance. The JC3 provides the Soldier with 16 hours of chemical protection in a contaminated environment after 30 days of wear. The JC3 integrates and is compatible with legacy and new CB clothing items and chemical masks. The decision has been made to change JSLIST shelf life to 15 years; the initial five-year testing has been eliminated and first surveillance testing on garments will take place 10 years from date of manufacture to be extended five years for a total of 15 years

The **Joint Protective Aircrew Ensemble (JPACE)** is a one-piece coverall that provides CB protection and flame resistance for aircrews. Army aviators wear the JPACE with a vapor protective neck dam to provide added protection in the head/neck region. The JPACE provides the Soldier with 16 hours of chemical protection in a contaminated environment after 30 days of wear. The JPACE integrates and is compatible with legacy and new CB clothing items and chemical masks.

PROGRAM STATUS

- ✓ **3QFY08** JPACE Universal Camouflage Pattern production procurement initiated
- ✓ All other items are available for requisition
- ✓ **3QFY08** JC3 Type Classification–Standard
- ✓ **FY10** JC3 and JPACE in production
- ✓ **FY11** Contract established to procure additional neck dams

PROJECTED ACTIVITIES

- + **FY12** Continue JC3 and JPACE surveillance testing every five years
- + **1QFY12** Field JPACE to US Army Aviators in Korea

CONTRACTORS

CPU
Peckham Vocational Industries (Lansing, MI)

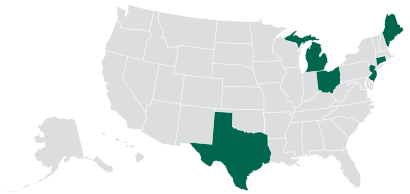
FIS-C
Morning Pride Manufacturing (Dayton, OH)
Interspiro (Branford, CT)

SCALP
Harris Manufacturing Co. (Trenton, NJ)

JSLIST
ReadyOne (El Paso, TX)
Group Home Foundation (Belfast, ME)
Creative Apparel (Belfast, ME)

JC3
Group Home Foundation (Belfast, ME)
ReadyOne (El Paso, TX)

JPACE
Creative Apparel (Eastport, ME)



JC3

Joint Protective Aircrew Ensemble (JPACE)

Joint Service Lightweight Integrated Suit Technology (JSLIST)

Suit, Contamination Avoidance, Liquid Protective (SCALP)

Chemical Protective Undergarment (CPU)

U.S. Army Firefighter's Integrated Suit-Combat (FIS-C)

Chemical Protective Clothing–Accessories

MISSION

Protects the Soldier from chemical and biological (CB) contamination during battle and other mission operations.

The **Chemical and Biological (CB) Protective Equipment Bag** is designed to consolidate and transport the CB protective gear. It is made of an abrasion-resistant nylon and incorporates a roll down quick-release buckle closure system. Modular Lightweight Load-carrying Equipment (MOLLE) style web loops have been stitched to the carrier to accept cargo tie-down straps and for attachment to the current and developmental load carrying equipment. The bag is resistant to petroleum, oils, and lubricants, as well as corrosion, fungus, insect repellent, and salt water.

The **Chemical Protective Helmet Cover** is a one-piece configuration made of butyl rubber-coated nylon cloth and gathered at the opening by elastic webbing enclosed in the hem. It provides any standard helmet with protection from CB contamination.

The **Chemical Protective Glove Set** includes the impermeable butyl rubber gloves with cotton knit liners, which protect the hands in a chemical-threat environment. The gloves are manufactured in right- and left-hand five-fingered configurations, and shaped to follow the natural curvature of the hand in a relaxed position, while the inner permeable cotton five-finger gloves fit either hand.

The **Green Vinyl Overboots/Black Vinyl Overboots (GVO/BVO)** are made of an impermeable molded vinyl plastisol and have a slip-resistant outsole design. Elastic loops are pulled over three metal fasteners to close the gusset expansion after donning. The GVO/BVO are worn over standard combat boots to provide chemical protection when needed and moisture protection during wet weather. The GVO/BVO provides 24 hours of protection against all known CB agents after a maximum wear of 60 days.

The **Alternative Footwear System (AFS)** is made from an impermeable compounded butyl rubber with improved traction and durability over the GVO/BVO. AFS boots have slip coat treatment on the inside for ease of donning and doffing. Fastening and usage are identical to the BVO. The AFS provides 24 hours of protection against all known CB agents after a maximum wear of 45 days.

The **Joint Block I Glove Upgrade (JBIGU)** is a 2 layer glove system with liner made with a PTFE membrane and nomex outer glove. The JBIGU provides 24 hours of protection against all known CB agents after 14 days/84 hours of active wear (6 hour/day) and improved FR over the current butyl rubber/summer flyer glove system.

The **Joint Block II Glove Upgrade (JB2GU)** Non-Flame Resistant (nFR) is made of impermeable articulated butyl rubber that provides increased tactility and dexterity over the current 25-mil butyl rubber glove. The JB2GU nFR provides 24 hours of protection after 30 days of wear.

PROGRAM STATUS

- ✔ The old CB Protective Equipment Bag has been replaced with a new CB Protective Equipment Bag in Universal Camouflage Pattern that is compatible with the MOLLE system. Nuclear biological chemical bag available for requisition.
- ✔ **FY10** Army is no longer procuring BVOs/GVOs
- ✔ **FY10** All other items available for requisition

PROJECTED ACTIVITIES

- \+ **FY12** Continue the transition of the current 25-mil butyl rubber gloves to JSLIST Block II Glove Upgrade nFR
- \+ **FY12** Continue the transition of the current BVO/GVO to AFS as the standard chemical protective overboot
- \+ **FY12** Continue surveillance testing of the Chemical Protective Glove Set, GVO/BVO and AFS every five years throughout the life of the items
- \+ **FY12** Obtain more test data on JBIGU for a decision on use for the glove by the Army

CONTRACTORS

CB Protective Equipment Bag
National Institute for the Blind (Seattle, WA)

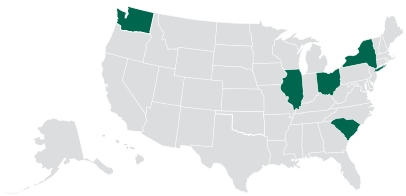
Chemical Protective Helmet Cover
Human Technologies (Utica, NY)

Chemical Protective Glove Set
North Safety Products (Charleston, SC)
Guardian Manufacturing (Willard, OH)

Overboot
Norcross Safety Products (Rock Island, IL)

AFS
Airboss Defense (Quebec, Canada)

JB2GU nFR
Airboss Defense (Quebec, Canada)



Chemical Protective Glove Set

Alternative Footwear System (AFS)

Green Vinyl Overboot/Black Vinyl Overboot (GVO/BVO) Caption Text

Chemical Protective Helmet Cover

Chemical and Biological (CB) Protective Equipment Bag

Toxicological Ensembles

MISSION

Protects the Soldier working in highly toxic, oxygen-deficient, or unknown environments that are immediately dangerous to life and health.

The **Improved Toxicological Agent Protective (ITAP)** Suit is a National Fire Protection Agency (NFPA) 1992 and 1994 Class-2 certified ensemble that will provide protection during peacetime and wartime short-term operations. ITAP will be deployed in "Immediately Dangerous to Life and Health" (IDLH) toxic chemical environments (up to 1 hour), for emergency lifesaving response, incident response, and routine chemical activity operations.

The **Self-Contained Toxic Environment Protective Outfit (STEPO)** is an NFPA 1991 and 1994 certified, totally encapsulating system that provides protection for personnel working in highly toxic, oxygen-deficient, or unknown environments that are IDLH. STEPO will replace the M3 Toxicological Agents Protective (TAP) ensemble for use in highly toxic areas (OSHA Level-A environments), while the ITAP ensemble is used for routine chemical activity operations in non-IDLH environments. STEPO provides four hours of percutaneous protection against chemical-biological agents, toxic industrial chemicals, unknown chemicals, rocket fuels, petroleum, oil, and lubricants.

STEPO and ITAP are both composed of five layers of Nomex and Teflon. The ITAP has an integral hood that is composed of three layers of Nomex and Teflon. STEPO and ITAP provide respiratory protection and cooling to the user and both are compatible with the personnel radios.

PROGRAM STATUS

+ Fielding completed

PROJECTED ACTIVITIES

+ Sustainment and available for requisition

CONTRACTORS

ITAP

Saint-Gobain (Merrimack, NH)

STEPO

Saint-Gobain (Merrimack, NH)

Improved Toxicological Agent Protective (ITAP) Suit

Self-Contained Toxic Environment Protective Outfit (STEPO)

Modern Army Combatives Kit (MACK)

MISSION

Allows Soldiers to experience the physical and emotional demands of hand-to-hand fighting prior to engaging in combat.

The **Modern Army Combatives Kit (MACK)** enables units to conduct Level 3 and 4 combative training in accordance with the Modern Army Combatives Program. Because it can be used to conduct safe, realistic, combatives training the MACK enhances Soldier performance and confidence going into battle. Component materials for the MACK are foam, plastic, Plexiglas, leather, and polyester. It is black and comes in sizes small, medium, large, and extra large.

PROGRAM STATUS

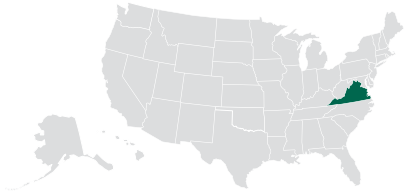
- **4FY08** Full-rate production
- **2FY09** First unit equipped
- **2FY09** First 100 kits fielded
- **3FY09** Total of 250 kits fielded
- **4FY11** Total of 1200 kits fielded

PROJECTED ACTIVITIES

- **FY12** Continue fielding of remaining 300 kits

CONTRACTORS

Atlantic Dive Supply (ADS) (Virginia Beach, VA)
Ring Side (Virginia Beach, VA)
ASP (Virginia Beach, VA)
London Bridge Trading Company (Virginia Beach, VA)



T-10D Parachute

MISSION

Enables the safe delivery of the parachutist, weapon systems, and equipment to the drop zone in winds up to 13 knots.

The static line-deployed **T-10D Parachute** is used for combat mass-assault airborne operations and training. Depending upon air density and the jumper's total weight, the parachute's average rate of descent is from 22 to 24 feet per second; total suspended weight limitation is 360 pounds. The parachute is deployed using either a 15- or 20-foot static line, allowing the parachutist to be delivered by either C-130 or C-17 U.S. Air Force aircraft. The T-10D main parachute is a parabolic shape and has a nominal diameter of 35 feet, 30 suspension lines, and a mesh anti-inversion net.

The T-10D Parachute assembly consists of five components: pack tray, troop harness, deployment bag, riser, and canopy. The parachute has a combined service life of 16.5 years; service life is 12 years and shelf life is 4.5 years. The T-10D Parachute must be repacked every 120 days. The T-10D Parachute is made of nylon materials commonly used in the manufacturing of parachutes.

The **Modified Improved Reserve Parachute System (MIRPS)** includes a standard T-10 reserve parachute canopy assembly, integrated with a commercial deployment assistance device composed of a bridle line, pilot parachute, and spring. The pack tray includes a line bag for stowing suspension lines and an inner staging flap that holds the reserve parachute until sufficient tension is achieved through the bridle/pilot parachute assembly during deployment. The MIRPS pack tray is slightly larger than that of the T-10 reserve pack tray so it accommodates a larger pilot chute, spring, and bridle. The pack tray has a yellow stripe along the rip cord protector flap and is made of nylon textile materials commonly used to make parachute systems.

PROGRAM STATUS

- ✔ In sustainment

PROJECTED ACTIVITIES

- + Will be phased out as the T-11 is phased in

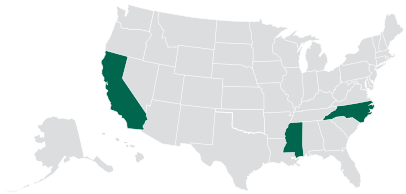
CONTRACTORS

T-10D

Airborne Systems NA (Santa Ana, CA)
Mills Manufacturing Corp. (Asheville, NC)
Pioneer Aerospace Corp. (Columbia, MS)

MIRPS

Airborne Systems NA (Santa Ana, CA)
Mills Manufacturing Corp. (Asheville, NC)



Military Free Fall (MFF) Parachute System

MISSION

Maximizes the success of Army free fall missions by enabling clandestine insertion.

The **Military Free Fall (MFF) Advanced Ram Air Parachute System (ARAPS)** provides a multi-mission, high-altitude parachute delivery system that allows personnel to exit at altitudes between 3,500 feet and 35,000 feet. The parachute, which replaces the current MC-4 parachute, supports a total jumper weight of 450 pounds. It also provides non-MFF personnel with a ram air parachute that is static-line deployed.

The ARAPS' three accessory systems are at different stages of the acquisition process:

The **Electronic Automatic Activation Device (EAAD)** is used with current and next-generation parachute systems, replacing the Automatic Ripcord Release. EADD provides a simpler and more reliable method of activation in the event the parachutist is unable to deploy the parachute at the appropriate altitude. The EAAD activates and cuts the reserve parachute closing loops if the jumper is falling at 78 mph or faster at the minimum deployment altitude.

The **Navigation Aid (NAVAID)** will provide in-flight navigation and mission planning capability, allowing parachutists under canopy to locate themselves and the intended drop zone easily. The system utilizes a GPS that integrates with the Mission Planner of the Joint Precision Airdrop System (MP JPADS), ensuring more accurate canopy flight and drop zone landings.

The **Parachutist Oxygen Mask (POM)** will provide supplemental oxygen at 13,000 feet and higher and will be easier to use and maintain than the current MBU-12P mask. The POM will not interfere with the parachutist's vision or range of motion.

PROGRAM STATUS

- ✓ **1QFY08** EAAD first unit equipped
- ✓ **4QFY09–2QFY08** MFF ARAPS Capability Production Document approved
- ✓ **3QFY08** Award of POM contract
- ✓ **3Q–4QFY08** POM developmental testing
- ✓ **3QFY08** Conduct NAVAID user assessment to evaluate available technologies, validate requirements and get user feedback
- ✓ **3QFY11** MFF ARAPS design validation
- ✓ **FY09** Continue EAAD fielding and new equipment training
- ✓ **1QFY09–2QFY09** POM operational testing
- ✓ **4QFY09** Milestone C decision for POM
- ✓ **2QFY10** First unit equipped with POM
- ✓ **1QFY11** MFF ARAPS design validation

PROJECTED ACTIVITIES

- \+ **1QFY12** MFF ARAPS developmental testing
- \+ **1QFY12** MFF ARAPS operational testing

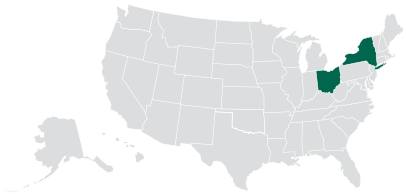
CONTRACTORS

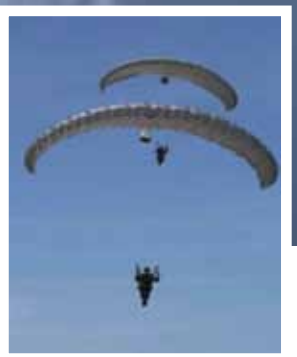
MFF ARAPS
To be determined

EAAD
SSK Industries (Lebanon, OH)

NAVAID
To be determined

POM
Carleton Technologies Inc. (Orchard Park, NY)





Military Free Fall (MFF) Advanced Ram Air Parachute System (ARAPS)

Navigation Aid (NAVAID)

Parachutist Oxygen Mask (POM)

Electronic Automatic Activation Device (EAAD)

Maneuverable Canopy (MC) Personnel Parachute Systems

MISSION

Enables the parachuting Soldier to steer toward a specific impact point in the drop zone.

The **MC-6 Maneuverable Canopy Personnel Parachute System** offers the airborne Soldier a new tactical, static line-deployed, steerable personnel parachute system, replacing the legacy MC-1 series parachute assembly, associated harness, and reserve. The MC-6 has a safer rate of descent, lower opening shock, reduced canopy damage, better turn ratio, and a better glide ratio than the MC1-1C. The system was designed specifically to operate at higher altitudes with heavier weights. These improvements result in better maneuverability, greater canopy control, and reduced jumper injury. This program is a combined U.S. Army and Special Operations Command project.

The MC-6 can be used throughout the full spectrum of operational and environmental conditions. The MC-6 integrates the maneuverable main canopy (SF-10A) with the T-11 harness and T-11 reserve parachute (T-11R).

The MC-6 main and reserve canopies are made of 1.1 ounces low-porosity ripstop nylon. Block construction facilitates manufacturing and repair. The container bag is made of Cordura™, an abrasion and water-resistant fabric. The harness is made of Type 7 webbing.

The main canopy assembly weight with T-11 harness is 26 pounds. The T-11R reserve assembly weight is 15 pounds. Main canopy is 32 feet in diameter; the reserve canopy is 24 feet in diameter.

The **MC1-1C** is utilized by small teams during airborne operations and training. The parachute has a parabolic shape with an H-TC shape configuration in the rear with 60 square feet of canopy removed. It has a nominal diameter of 35 feet and weighs 28 pounds.

PROGRAM STATUS

MC-6

- ✓ **3QFY08** Completed first article test for harness assembly
- ✓ **3QFY08** Resumed production and delivery of systems
- ✓ **4QFY08** Modification work order approved to modify fielded systems
- ✓ **1QFY09** Fielded
- ✓ **1QFY09** Modification work order
- ✓ **2QFY09** 1st Special Forces Group (Airborne) became the first unit equipped

PROJECTED ACTIVITIES

- \+ **FY12** Continue fielding

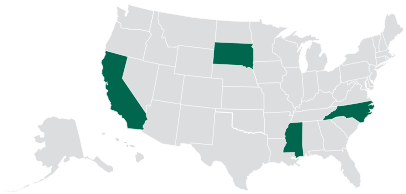
CONTRACTORS

MC-6

Airborne Systems NA (Santa Ana, CA)
Aerostar International (Sioux Falls, SD)
Mills Manufacturing Corp. (Asheville, NC)
Pioneer Aerospace Corp. (Columbia, MS)

MC1-1C

Airborne Systems NA (Santa Ana, CA)
Mills Manufacturing Corp. (Asheville, NC)
Pioneer Aerospace Corp. (Columbia, MS)



Non-Maneuverable Canopy (T-11) Personnel Parachute System

MISSION

Provides the Soldier with a parachute capable of handling heavier jump weights with a more stable, slower rate of descent.

The **Non-Maneuverable Canopy (T-11)** Personnel Parachute System is the next-generation personnel parachute system. The T-11 provides the airborne Soldier with the first wholesale modernization of the tactical parachute system since the 1950s. The T-11 includes a completely redesigned main and reserve parachute and an integrated harness assembly that is suitable for the 5th percentile to the 95th percentile Soldier.

The main canopy is a modified version of a cross/cruciform platform. The canopy has an increased inflated diameter of 14 percent and a 28 percent increase in surface area, when compared with the T-10D assembly. The T-11 main canopy utilizes a unique deployment sequence to reduce the opening shock and canopy oscillation. The T-11 is designed to have an average rate of descent of 19 feet per second for the 95th percentile Soldier, compared with 24 feet per second with the T-10D. This reduction will result in significantly lower landing injury rates for jumpers.

The reserve canopy is a proven derivative of the British Low Level Parachute (LLP) aero-conical design that includes apex scoop pockets at the top of the reserve canopy and skirt assist lines at the system's hem to promote fast opening of the reserve system during low-speed malfunctions. Unlike the current reserve parachute system, the T-11R reserve uses an omni-directional, center-pull deployment system. The T-11 harness is designed to displace opening shock forces of the reserve parachute equally along the long axis of the jumper's body.

PROGRAM STATUS

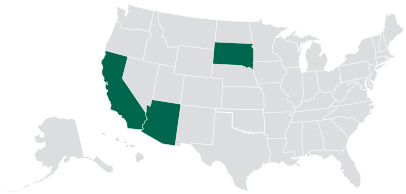
- ✓ **2QFY08** Began operational testing (OT)
- ✓ **4QFY08** Milestone C limited-rate initial production decision
- ✓ **1QFY09** Completed OT
- ✓ **3QFY09** Milestone C full-rate production decision
- ✓ **3QFY09** First unit equipped
- ✓ **FY10** Started full-rate production and complete fielding to Ranger Regiment and begin fielding to 82nd Airborne Division

PROJECTED ACTIVITIES

- + **FY12** Continue fielding

CONTRACTORS

Aerostar International (Sioux Falls, SD)
Airborne Systems NA (Santa Ana, CA)
BAE Systems (Phoenix, AZ)



Parachutist Equipment

MISSION

Secures individual mission-essential equipment to the parachutist while in the aircraft, during exit, and during main parachute deployment and descent.

The **Harness, Single-Point Release (HSPR)**, used to secure equipment to the parachutist, is made of nylon webbing with friction adapters, two adjustable leg straps, two D-ring attaching straps, and a lowering line. The harness is secured around the equipment load and allows for a simultaneous release of the load and leg straps from the parachutist and parachute harness.

The **Parachutist Drop Bag (PDB)**, a commercial, load-carriage drop bag with a single point release, is used with a 7-foot lowering line when conducting military free-fall operations, or a 15-foot lowering line when conducting static line parachuting operations. It has exterior pockets for easy access to maps and water, and can be worn front- or rear-mounted. The retention strap is made of nylon webbing, has an attachment eyelet in the center, and has hook and pile tape on each end.

The **M-1950 Weapons Case**, a padded case, is made of cotton duck or nylon, and is designed to carry individual or crew served weapons. It protects both the jumper and the weapon from injury/damage during airborne operations. The M-1950 Weapons Case must be rigged with a lowering line when the case and weapon weight is more than 35 pounds.

PROGRAM STATUS

PROJECTED ACTIVITIES

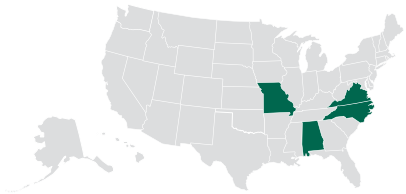
+ Continue sustainment activities

CONTRACTORS

HSPR
Huntsville Rehabilitation Foundation (Huntsville, AL)

PDB
Eagle Industries (Fenton, MO)

M-1950 Weapons Case
Federal Covers and Textiles (Kenly, NC)
Aerial Machine & Tool Corp. (Vesta, VA)



Single Point Release Attachment Straps
Breakaway Legstraps
Single Point Release Cover
Single Point Release Pull Tab

Parachutist Drop Bag (PDB)

Harness, Single-Point Release (HSPR)

Text

M-1950 Weapons Case

Soldier Clothing and Individual Equipment Future Initiatives

MAN PORTABLE DESALINATION SYSTEM

Program Executive Office (PEO) Soldier is coordinating with the Natick Soldier Research Development and Engineering Center to develop the Man Portable Desalination System. A block initiative under the On-The-Move Hydration (OTMH) System, the system is a Small Business Innovative Research project (SBIR) A09-116 designed to provide the capability for individual Soldiers to convert salt water to fresh water. The requirements for the OTMH system are a total dry system weight (hydration system, water purification system, desalination system) of less than 2 pounds, a system flow rate no less than 200 ml/min, water quality in accordance to TB MED 577, and purified water production of no less than 45 liters before component replacement. The Man Portable Desalination System will also support the Individual Water Treatment Device (IWTD) requirement for expeditious and convenient hydration for Soldiers at will during the performance of mission-critical activities. The system will sustain the dismounted Soldier during continuous operations for at least 72 hours without supply replenishment. With Soldiers increasingly engaged in a spectrum of environments worldwide, the Man Portable Desalination System answers the critical need for an individual hydration system that supports the Soldier and lightens his equipment load.

WASHABLE WOOL PRODUCTS

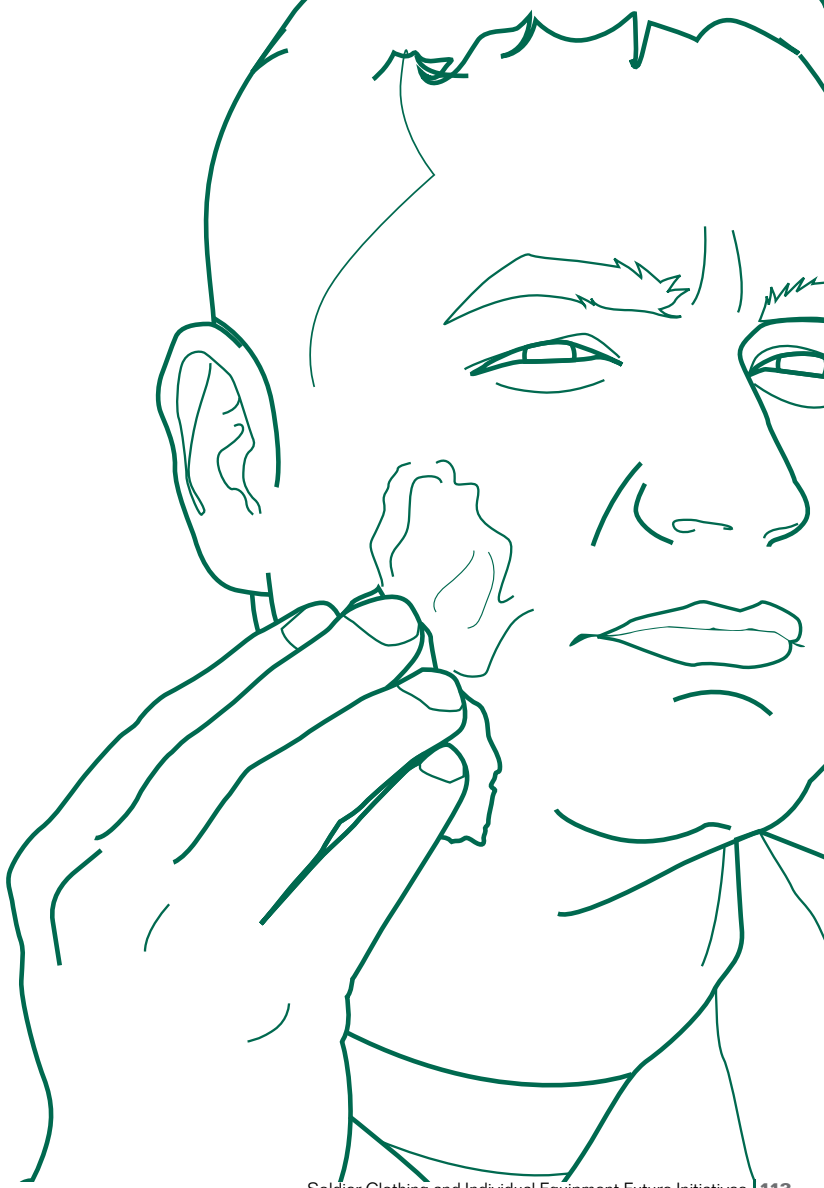
PEO Soldier is coordinating with the Natick Soldier Research Development and Engineering Center to develop a washable wool process. Flame resistant wool fabrics show promise for combat clothing applications but historically have been underutilized on the battlefield due to sustainment issues—many wool-based clothing articles shrink excessively when machine washed and dried, making them impractical for the battlefield. New innovative protective fabrics made from wool could be introduced, but there is no domestic source for washable wool treatments for fibers and fabrics. This new process will be 100 percent Berry Amendment-compliant and will develop a textile treatment that reduces the shrinkage of wool, when commercially laundered, without detrimentally affecting other wool fiber properties such as strength and flame resistance. A shrink-resistant treatment would make wool a viable candidate for protective combat clothing and could be used in virtually any application from head to toe including jackets, trousers, underwear, headwear, hand wear, and socks. Unlike domestic synthetic fibers, wool is inherently flame resistant, moisture wicking, thermal resistant, anti-microbial, and durable. Wool products answer the critical need for a fabric that supports the Soldier's comfort and protection in all environments and lightens his equipment load.

INDIVIDUAL DESALINATION SYSTEM (IDS)

Individual Desalination System (IDS): Block 2 of the Individual Water Treatment Device (IWTD) will allow the Soldier to desalinate salt water hands free and on the move. The IDS will be compatible with current and future personal hydration systems, the Block 1 IWTD, and Soldier load-carriage equipment. The technology and configuration of the IDS has not been determined, although it must have a volume of <100 cubic inches and weight of <2.5 pounds while providing fresh water on demand (>/= 200 mL/min) from salt water without the use of sugar substances by removing 98 percent of the salt in the incoming water.

TOPICALLY APPLIED FACE-GEL

Product Manager Soldier Clothing and Individual Equipment in conjunction with Natick Soldier Research Development and Engineering Center, is developing a topically applied gel-like material that can be applied to exposed skin to prevent flame and thermal injuries. This Small Business Innovative Research project is completing the end of its first year, and selected manufacturers will move forward to Phase II in FY11.



Project Manager Soldier Sensors and Lasers (PM SSL)

Product Manager Soldier Maneuver Sensors

Product Manager Soldier Precision Targeting Devices

PM SSL provides Soldiers with improved lethality, mobility, and survivability in all weather and visibility conditions. Soldier-borne sensors and lasers enhance the Soldier's ability to see in all battlefield and lighting conditions, to acquire objects of military significance before the Soldier is detected, and to target threat objects accurately for engagement by Soldiers or guided munitions. These systems provide critical, on-the-ground direct support to U.S. forces.

"For thermal sights I was assigned four PAS-13s…they ended up being a primary means of detection on my patrol base for any type of threat during nighttime hours…using PAS-13s we were able to stop a guy from using a small canal that happened to be filled with water. He was trying to swim up the canal and get under a piece of the road that was part of our patrol base. From there he would have been able to easily push his way into our patrol base and breach our wire."

–CPT N. Manghelli

PRODUCT MANAGER SOLDIER MANEUVER SENSORS (PM SMS)

PM SMS is responsible for developing and equipping the Soldier with sensors and lasers to help dominate the battlefield through improved lethality, mobility, and survivability in all weather and visibility conditions.

The **Enhanced Night Vision Goggle (ENVG)** combines image intensification and passive thermal imaging in one system for better situational awareness and increased lethality at night or in degraded battlefield environments.

Individual Gunshot Detector (IGD) is a self-contained passive acoustic system with the capability to detect and localize the source of small arms fire.

Thermal Weapon Sight (TWS), AN/PAS-13

MISSION

Enables the Soldier to detect and engage targets, day or night, in all weather and visibility-obscured conditions.

The **AN/PAS-13 Thermal Weapon Sight (TWS)** provides Soldiers with individual and crew served weapons the capability to see deep into the battlefield, increase surveillance and target acquisition range, and penetrate obscurants, day or night. The TWS systems use uncooled, forward-looking infrared technology and provide a standard video output for training, image transfer, or remote viewing. Thermal Weapon Sights are lightweight systems that are mountable onto a weapon rail and operate to the maximum effective range of the weapon.

PM SSL plans to include 17 micron technology in future awards which will result in size, weight and power improvements over present configurations.

The TWS family comprises three variants, each of which is a silent, lightweight, compact, durable, battery-powered thermal sight. They are:

AN/PAS-13(V)1 Light Weapon Thermal Sight (LWTS) for the M16 and M4 series rifles and carbines, as well as the M136 Light Anti-Armor Weapon.

AN/PAS-13(V)2 Medium Weapon Thermal Sight (MWTS) for the M249 Squad Automatic Weapon and M240B series medium machine guns.

AN/PAS-13(V)3 Heavy Weapon Thermal Sight (HWTS) for the squad leader's weapon, M16 and M4 series rifles and carbines, M24 and M107 sniper rifles, and M2 HB and MK19 machine guns.

Weight: HWTS: 3.9 pounds; MWTS: 2.9 pounds; LWTS: 1.95 pounds
Target recognition range: HWTS: 2,200 meters; MWTS: 1,100 meters; LWTS: 550 meters
Operational time: HWTS/MWTS: 6.5 hours (six lithium AAs); LWTS: 5 hours (four lithium AAs)
Magnification: HWTS: 10x/3.3x (narrow/wide); MWTS: 5x/1.66x (narrow/wide); LWTS: 1.55x

PROGRAM STATUS

- ✔ **FY11** Fielded to units supporting Operation Enduring Freedom and Operation New Dawn

PROJECTED ACTIVITIES

- + **FY12** Continue to support and field in accordance with Headquarters, Department of the Army guidance

AN/PAS-13(V)1 Light Weapon Thermal Sight (LWTS)

AN/PAS-13(V)2 Medium Weapon Thermal Sight (MWTS)

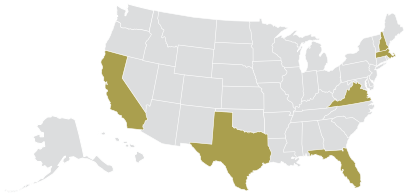
AN/PAS-13(V)3 Heavy Weapon Thermal Sight (HWTS)

CONTRACTORS

BAE Systems (Lexington, MA; Manassas, VA; Austin, TX; Manchester, NH)

DRS Optronics (Dallas, TX; Melbourne, FL)

Raytheon (Dallas, TX; Goleta, CA; McKinney, TX; Plano, TX)



Enhanced Night Vision Goggle (ENVG), AN/PSQ-20

MISSION

Provides the Soldier with enhanced situational awareness day or night in all weather and degraded battlefield conditions.

The **AN/PSQ-20 Enhanced Night Vision Goggle (ENVG)** provides increased capability by incorporating image intensification and long-wave infrared sensors into a single, helmet-mounted passive device. The ENVG combines the visual detail in low light conditions that is provided by image intensification with the thermal sensor's ability to see through fog, dust, and foliage that obscure vision. This thermal capability makes the ENVG, unlike earlier night vision devices, useful during the day as well as at night. The ENVG allows Soldiers to rapidly detect and engage targets because it permits use of existing rifle-mounted aiming lights.

Several engineering enhancements to the ENVG improve its fit and function. For example, putting the battery pack on the rear of the helmet provides better balance and increases comfort as well as stability. The system is also designed to work with existing ballistic eye protection. In addition, the system is now more compact and easier to stow when not in use, which enhances the Soldier's mobility.

Weight (total system): 2 pounds, including four AA batteries
Man-sized target (standing and moving) recognition:
80 percent probability at 150 meters
50 percent probability at 300 meters
Continuous operation: 7.5 hours, continuous fusion, plus an additional 7.5 hours of image intensification only with no battery change

PROGRAM STATUS

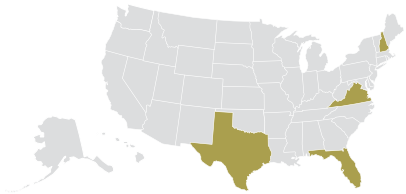
- ✓ **FY10** Awarded four 3-year contracts for supply of new ENVG systems using the 18mm tube
- ✓ **FY11** Fielded to units supporting Operation Enduring Freedom and Operation New Dawn

PROJECTED ACTIVITIES

- \+ **FY11-FY12** Qualification of the new ENVG systems
- \+ **FY12** Continue to support and field in accordance with Headquarters, Department of the Army guidance
- \+ **FY12** Production award(s)

CONTRACTORS

ITT Industries Night Vision (Roanoke, VA)
L-3 Insight Technology Inc. (Londonderry, NH)
DRS Optronics (Melbourne, FL)
Raytheon Company (Dallas, TX)



Monocular Night Vision Device (MNVD), AN/PVS-14

MISSION

Provides Soldiers with the capability to engage and execute close combat, combat support, and combat service support operations in very low-light (starlight) conditions.

The **AN/PVS-14 Monocular Night Vision Device (MNVD)** is a head- or helmet-mounted passive device that amplifies ambient light and very near infrared energy to enable night operations. The system is designed for use in conjunction with rifle-mounted aiming lights.

The AN/PVS-14 incorporates an infrared (IR) illuminator with a momentary and continuous-on switching function. IR operation and low-battery indicators are displayed within the Soldier's field of view. The AN/PVS-14 has a lightweight, fully adjustable military head strap that allows for comfortable long-term use. A wide range of optional accessories includes high-magnification lenses and a helmet-mounting bracket. The AN/PVS-14 can be mounted to the M16 Rifle/M4 Carbine receiver rail.

Weight: 1.25 pounds with battery
Magnification: 1x
Range: 150 meters
Operational time: ≥ 15 hours
Power: One AA battery

PROGRAM STATUS

- ✓ **FY11** Fielded to units supporting Operation Enduring Freedom and Operation New Dawn
- ✓ **FY11** Awarded two 3-year OMNIBUS VIII contracts to ITT Geospatial Systems and L-3 Warrior Systems ETO to support customer and sustainment requirements

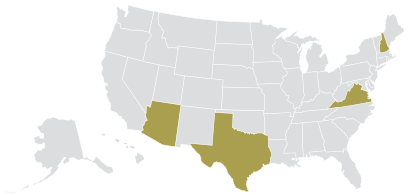
PROJECTED ACTIVITIES

- \+ **FY12** Continue to field in accordance with Headquarters, Department of the Army guidance
- \+ **FY13** Full Operational Capability

CONTRACTORS

ITT Geospatial Systems (Roanoke, VA)

L-3 Warrior Systems Electron Tube Operations (ETO) (Garland, TX; Tempe, AZ; Londonderry, NH)



Aviator's Night Vision Imaging System (ANVIS), AN/AVS-6

MISSION

Enables aviators to conduct flight operations under very low (starlight) ambient light conditions.

The **AN/AVS-6 Aviator's Night Vision Imaging System (ANVIS)** is a third-generation, helmet-mounted, direct-view, image-intensification device that enables aviators to operate more effectively and safely during low-light and degraded battlefield conditions.

The low-light sensitivity represents a 35 to 40 percent improvement over the earliest ANVIS. Additionally, the gated power supply enables operation at significantly higher light levels than any of the previous designs. All ANVIS systems are capable of operating for 24 hours on a pair of AA batteries.

Weight (maximum): 1.3 pounds with batteries
Magnification: 1x
Operational time: 24 hours
Power: Low-profile battery pack or from aircraft-supplied power

PROGRAM STATUS

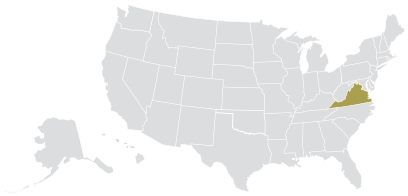
- ✓ **FY11** Supported Operation Enduring Freedom and Operation New Dawn

PROJECTED ACTIVITIES

- \+ **FY12** Continue fielding, operations, and support
- \+ **FY12** Competitive procurement

CONTRACTORS

ITT Geospatial Systems (Roanoke, VA)



Clip-on Sniper Night Sight (Clip-on SNS), AN/PVS-30

MISSION

Enables the sniper to acquire and engage targets using the M110 Semi-Automatic Sniper System (SASS) during periods of limited visibility and at low-light levels.

The **AN/PVS-30 Sniper Night Sight (SNS)** is a lightweight, in-line weapon-mounted sight used in conjunction with the day optic sight on the M110 SASS and the XM2010 ESR. It employs a variable gain image tube that can be adjusted by the sniper depending on ambient light levels. When used in conjunction with the M110 and XM2010 day optical sight, it provides for personnel-sized target recognition at quarter moon illumination in clear air to a range of 600 meters. The SNS has an integrated rail adapter that interfaces directly to the MIL-STD-1913 rail for quick and easy mounting to or dismounting from the weapon.

The SNS allows a sniper to maintain the current level of accuracy with the M110 and to deliver precise fire within 1 minute of angle. Use of the SNS does not affect the zero of the day optical sight and allows the M110 and the XM2010 to maintain bore sight throughout the focus range of the SNS and the M110 and XM2010 day optical sight.

Weight: < 3.5 pounds
Man-sized target recognition: ≤ 600 meters
Focus range: 25 meters to infinity
Power: One AA battery

PROGRAM STATUS

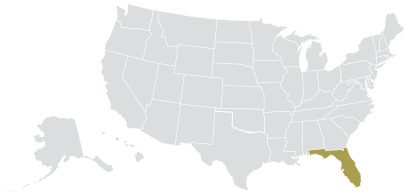
- ✓ **FY11** Competitive procurement; fielded to snipers supporting Operation Enduring Freedom and Operation Iraqi Freedom

PROJECTED ACTIVITIES

- \+ **FY12-13** Continue to field in accordance with Headquarters, Department of the Army guidance

CONTRACTORS

Knight's Armament Co. (Titusville, FL)



Multifunction Aiming Light (MFAL)

MISSION

Enables laser pointing and precision aiming in visible or infrared spectrums.

The **Multifunction Aiming Light (MFAL)** family includes the **AN/PEQ-15 Advanced Target Pointer Illuminator Aiming Light (ATPIAL)** and the **AN/PEQ-15A Dual Beam Aiming Laser–Advanced² (DBAL-A²)**.

The AN/PEQ-15 and AN/PEQ-15A class 3B MFAL devices replace the AN/PAQ-4C. The infrared (IR) and visible aiming lasers are co-aligned. The visible laser can be used to bore-sight the device to a weapon without the need of night vision goggles. The IR lasers emit a highly collimated beam of IR light for precise weapon aiming, as well as a separate, IR-illuminating laser with adjustable focus. A visible red-dot aiming laser can also be selected to provide precise aiming of a weapon during daylight or night operations. AN/PEQ-15 and AN/PEQ-15A IR lasers can be used as handheld illuminator pointers, or can be weapon-mounted with included hardware.

AN/PEQ-15

Weight: 7.5 ounces

Effective range:
- **IR lasers:** 600 meters low power/2,000 meters high power
- **Visible laser:** 25 meters in daylight, but not in direct sunlight

Operational time: 5 hours with lasers(s) on Dual High
Power: One DL 123, 3-volt battery

AN/PEQ-15A

Weight: 8 ounces
Effective range:
- **IR lasers:** 600 meters low power/2,000 meters high power
- **Visible laser:** 25 meters in daylight, but not in direct sunlight

Operational time: 5 hours with laser(s) on Dual High
Power: One DL 123, 3-volt battery

PROGRAM STATUS

✔ **FY09** Full-rate production

PROJECTED ACTIVITIES

+ **FY12** TACOM to award sustainment contracts for each system
+ **FY12** Continue to field in accordance with Headquarters, Department of the Army guidance

CONTRACTORS

L3/Insight Technology Inc. (Londonderry, NH)
Laser Devices Inc. (Monterey, CA)

AN/PEQ-15 ATPIAL

AN/PEQ-15A DBAL-A2

Integrated Laser White Light Pointer (ILWLP), AN/PEQ-14

MISSION

Enables Soldiers to acquire and engage targets in conditions of limited visibility using unaided vision or night vision goggles.

The **AN/PEQ-14 Integrated Laser White Light Pointer (ILWLP)** is a small, lightweight device that can be handheld or mounted on the M9 pistol with a MIL-STD-1913 rail adapter and combines the functions of a white light flashlight with adjustable focus, visible aiming laser, infrared (IR) aiming laser, and IR illuminator into one system. The ILWLP is used to engage targets with the M9 Pistol on the battlefield and in close-quarters combat engagements and is powered by two DL 123 standard commercial batteries. The ILWLP is fielded to military police units.

Weight: < 6 ounces
Range:
- **IR aim/illumination:** >100 meters
- **Visual aim:** 25 meters during daylight but not direct sunlight
- **White light:** 20 meters facial recognition

Operational time: Supports a 72-hour mission profile, which consists of 54 minutes of total use spread over the four functions
Power: Two DL 123, 3 volt batteries

PROGRAM STATUS

✓ **FY09** Fielded to military police

PROJECTED ACTIVITIES

\+ **FY12** Continue to field in accordance with Headquarters, Department of the Army guidance

CONTRACTORS

Insight Technology Inc. (Londonderry, NH)

U.S.ARMY
MP
BERLIN

Sense Through The Wall (STTW), AN/PPS-26

MISSION

Allows the Soldier to detect, locate, and "sense" personnel behind walls, doors, and other visible obstructions from a standoff distance.

The **AN/PPS-26 Sense Through The Wall (STTW)** system will provide Soldiers and small units with improved situational awareness (SA) in urban areas. The STTW devices will be used through non-metallic exterior and interior walls to detect both moving and stationary targets while being operated in either a standoff or against the wall capacity. The handheld STTW system will provide a real-time SA capability to the individual Soldier in built-up areas. It is powered by AA Lithium batteries.

PROGRAM STATUS

- ✓ **FY11** Developmental test
- ✓ **FY11** Development test/Limited user test

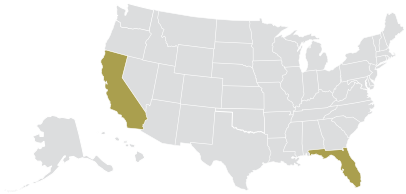
PROJECTED ACTIVITIES

- \+ **FY12** Operational test
- \+ **FY12** Milestone C
- \+ **FY13** First Unit Equipped

CONTRACTORS

L-3 Communications CyTerra (Orlando, FL)

Raytheon Space & Airborne Systems (Buena Park, CA)



Individual Gunshot Detector (IGD)

MISSION

Enables the Soldier to accurately determine the direction and range of gunfire in order to engage the threat.

Individual Gunshot Detector (IGD) is a self-contained passive acoustic system with the capability to detect and localize the source of small arms fire. The system is tuned to detect shockwave and muzzle blast signatures while screening out other acoustic events. The IGD uses information from both the shockwave of a bullet and the muzzle blast from the corresponding rifle fire as a single sensor to alert the user of the threat. These technologies provide range and alert data out to 400 meters within 20 percent range error and with a bearing error less than 15 degrees.

The single sensor system reports this solution directly to the individual Soldier on a visual display and audio alert within a second of a muzzle blast. The technology is able to detect and provide alert data for a wide range of small arms ammunition. The system is powered by two DL 123 batteries.

PROGRAM STATUS

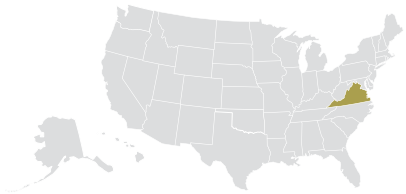
- ✓ **FY11** Production contract award
- ✓ **FY11** Initial operational capability
- ✓ **FY11** Army Test and Evaluation Command Forward Operational Assessment (FOA)

PROJECTED ACTIVITIES

- \+ **FY12** Continue to field in accordance with Headquarters, Department of the Army guidance

CONTRACTORS

QinetiQ North America (Reston, VA)



Weapons Mounted Light (WML) and Crew Served Weapons Light (CSWL)

MISSION

Provides a small, lightweight, weapon-mounted or hand-held white light capability for use in a variety of combat situations.

The **Weapons Mounted Light (WML)** and the **Crew Served Weapons Light (CSWL)** are part of the **Family of Flashlights (FoF)**.

The WML is a small (7 inches threshold, 6 inches objective), lightweight (10 ounces or less with batteries) white light that can be weapon-mounted or handheld. The WML is employed on small arms weapons including the M16A4 modular weapons, M4/M4A1, and M249 Squad Automatic Weapon. The light is able to mount on the weapons' MIL-STD-1913 rail and does not interfere with day/night optics, aiming lights, or other weapon accessories. When weapon-mounted, the WML will provide the Soldier the capability to illuminate a 20 x 30 x 8 foot darkened room or enclosure and identify targets accurately, with facial recognition at a range of 20 meters (threshold) or 25 meters (objective). The WML has dual activation controls, i.e., an on/off switch, located on the device housing and a wired remote control switch. The system operates on one or two DL 123 batteries. The WML includes an infrared capability.

The **CSWL** system is compact and lightweight, provides both overt (white light) and covert (infrared) illumination and can be mounted to the M2 .50 Caliber Machine Gun, the MK19 Grenade Machine Gun, the M240B/L Medium Machine Gun, or used in the handheld mode. The CSWL increases situational awareness by enabling the Soldier to observe deeper into the area of operation; increases the probability to detect, identify, deter or assist in engagement of hostile forces or identify friendly forces or non-combatants at greater ranges; and provides increased command and control at traffic control or check points. The CSWL operates with an on/off switch on the device housing or with a wired remote cable switch. Each system is powered by internal rechargeable batteries, the BA-5590 Battery Adapter, or the standard NATO adaptor to allow military vehicle power to extend the operational run time of the unit.

PROGRAM STATUS

- ✓ **FY11** Continued to field WMLs in accordance with current RFI schedule and guidance and CSWLs in accordance with approved requirements

PROJECTED ACTIVITIES

- \+ **FY12** Continue to field in accordance with Headquarters, Department of the Army guidance.

CONTRACTORS

SureFire (Fountain Valley, CA)
SPA Defense/NovaTac (Fort Lauderdale, FL)
Streamlight (Eagleville, PA)
Peak Beam (Edgemont, PA)
Xenonics (Carlsbad, CA)

LA-8/P Aircrew Laser Pointer (ALP)

MISSION

Provides a small, finger-mounted infrared laser for identification, signaling, and fire direction during night operations.

The **LA-8/P Aircrew Laser Pointer (ALP)** is a finger-mounted laser that has the capability to direct fires, identify friend and foe, and signal adjacent formations during night operations. It is mounted on a fire-resistant fabric designed to attach to the aircrew member's glove. Because it is hand worn, it does not interfere with aircraft operation. The master arming switch allows a high-power (Class IIIb) or low-power (Class I) infrared laser operation. A momentary fire button allows easy activation with the thumb. An indicator LED is lit when the momentary fire button is activated. An LED indicator is lit when the momentary fire button is activated.

Weight: <5 ounces
Maximum range: 3 kilometers
Power: Two 1.5 V AA lithium batteries

PROGRAM STATUS

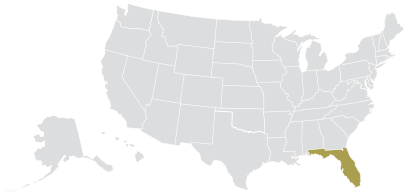
- ✓ **FY11** Achieved Airworthiness Release for OH-58D, UH-60 and SOCOM aircraft.
- ✓ **FY11** Fielded in accordance with Capability Production Document and Headquarters, Department of the Army guidance.

PROJECTED ACTIVITIES

+ **FY12–FY13** Field in accordance with Capability Production Document and Headquarters, Department of the Army guidance

CONTRACTORS

DRS (Melbourne, FL)



Green Laser Interdiction System (GLIS)

MISSION

Provides a non-lethal means for Soldiers to hail or warn potential hostile forces and/or civilians that they are approaching military operations.

The **Green Laser Interdiction System (GLIS)** is a rifle-mounted laser that allows the Soldier to interdict hostile actions through non-lethal effects. It is used to divert, disrupt, or delay potential threats before they can engage friendly forces. It is also an effective, non-lethal means to warn civilians that they are approaching a zone of military operations.

Weight: <14 ounces
Range: 300–1000m
Operational time: 2–6 hours
Power: DL 123 batteries

PROGRAM STATUS

- ✓ **FY11** Developmental testing/operational testing
- ✓ **FY11** Milestone C

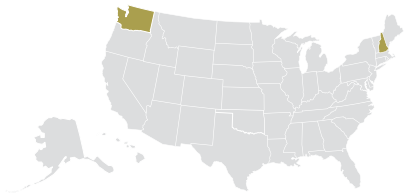
PROJECTED ACTIVITIES

- \+ **FY12** Full-rate production
- \+ **FY12** Full materiel release

CONTRACTORS

L3/Insight Technology Inc. (Londonderry, NH)

B.E. Meyers (Redmond, WA)

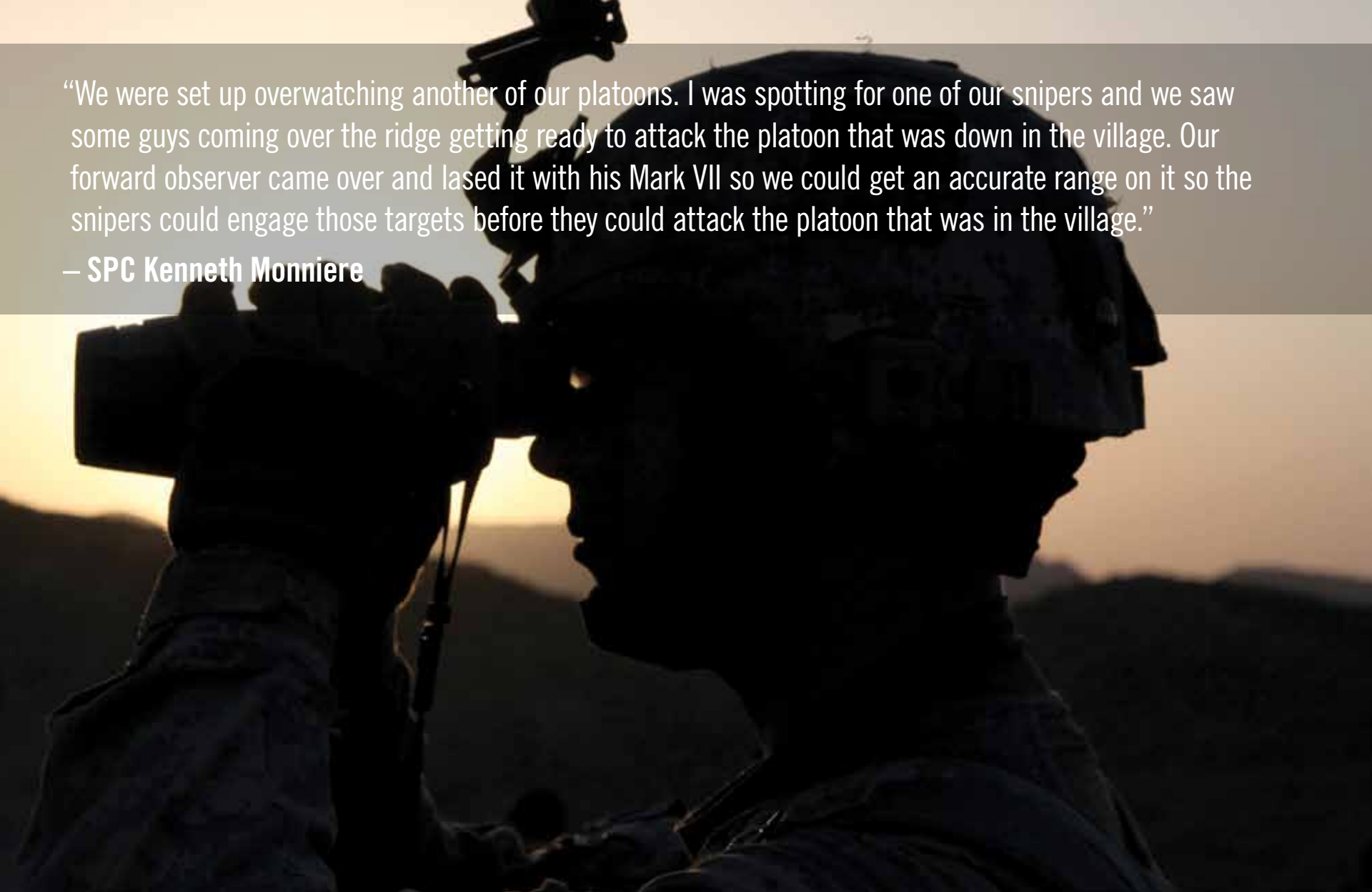


51

Soldier Sensors and Lasers Future Initiatives

FAMILY OF WEAPON SIGHTS

The **Family of Weapon Sights (FWS)** program will provide Soldiers with individual, crew served, and sniper weapons the capability to see deep into the battlefield, increase surveillance and target acquisition range, and penetrate obscurants, day or night. The FWS systems will use uncooled, forward-looking infrared technology, and have additional features to provide improved offensive firing capabilities, decreased transition time between mobility and targeting sensors, and improved firing accuracy. The FWS will have three variants, each of which will be silent, lightweight, compact, durable, and battery powered:



"We were set up overwatching another of our platoons. I was spotting for one of our snipers and we saw some guys coming over the ridge getting ready to attack the platoon that was down in the village. Our forward observer came over and lased it with his Mark VII so we could get an accurate range on it so the snipers could engage those targets before they could attack the platoon that was in the village."

– SPC Kenneth Monniere

PRODUCT MANAGER SOLDIER PRECISION TARGETING DEVICES (PM SPTD)

PM SPTD is the product office within Project Manager Soldier Sensors and Lasers that develops, produces, fields, and sustains man-portable precision targeting systems (locators, designators, and entry devices) for the Joint Force Scout, Forward Observer, and Joint Terminal Attack Controller for use across the full spectrum of operations.

The **AN/PED-1 Lightweight Laser Designator Rangefinder (LLDR)** enables fire support teams and forward observers to accurately locate targets, digitally transmit target location data to the tactical network, and laser-designate high-priority targets for engagement with precision munitions. Beginning in FY11, a high accuracy version of LLDR will enter production. It will add the capability to support GPS-guided munitions such as Excalibur, Guided Multiple Launch Rocket System (GMLRS), and Joint Direct Attack Munitions (JDAM).

The **Laser Target Locators Mark VII** and **Vector 21,** as well as the **Mark VIIE** and **TRIGR,** provide dismounted scouts, platoon leaders, fire support teams, and forward observers with daylight and limited night capability to observe and accurately locate targets and transmit target data to the fire-support and maneuver command, control, communications, computers, and intelligence system (C4I).

Laser Target Locator (LTL)

MISSION

Provides dismounted forward observers, scouts, snipers and platoon leaders daylight and limited night capabilities to accurately locate targets and transmit target data.

The **Laser Target Locators (LTL)** are handheld or tripod-mounted, lightweight laser target locators designed to deliver target data to the fire support and maneuver command, control, communications, and intelligence system (C4I).

The **Vector 21** is a Binocular Laser Rangefinder (BLRF) with an embedded digital compass. The Vector 21 can be connected to the Precision Lightweight GPS Receiver (PLGR) or a Defense Advanced GPS Receiver (DAGR) to provide target grid coordinates. When used in conjunction with an AN/PVS-14 Monocular Night Vision Device, the Vector 21 provides a limited system night capability.

The **Mark VII** integrates a monocular direct view optic, an image intensifier, a laser rangefinder and a digital compass into a day/night target location device. The Mark VII connects to the PLGR or the DAGR to provide grid coordinates to far targets. The MARK VII provides a limited night capability.

The **Mark VIIE** is an improved MK VII, which adds to all the Mark VII's capabilities a more powerful 8x day optic, an un-cooled thermal sight for increased night performance, and an embedded GPS receiver for greater accuracy.

The **TRIGR** incorporates a 7X direct view optic, an improved un-cooled thermal sight for increased sight range, a fiber laser rangefinder, digital compass and GPS that allows the system to determine target location.

Weight (handheld):
Vector 21: 3.8 pounds (not including the cable and PLGR or DAGR)
Mark VII: 4.2 pounds
Mark VII E: 5.5 pounds
TRIGR: 5.5 pounds

Weight (total system):
Vector 21: (daylight), 5.9 pounds; (night), 9.2 pounds
Mark VII: 6 pounds (not including the PLGR or DAGR)
Mark VII E: 5.5 pounds
TRIGR: 5.5 pounds

PROGRAM STATUS

- ✓ **FY11** Field in support of the Rapid Fielding Initiative (RFI)
- ✓ **FY11** Complete Production Verification Testing on the TRIGR

PROJECTED ACTIVITIES

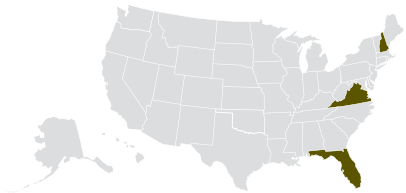
- \+ **FY12** Conduct a Milestone C and Type Classification Standard; Continue to field in accordance with RFI and Headquarters, Department of the Army guidance

CONTRACTORS

Vector 21
Ashbury International Group Inc. (Sterling, VA)

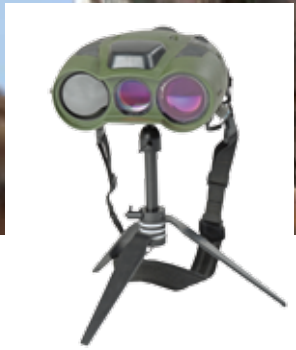
TRIGR
BAE Systems (Nashua, NH)

Mark VII/Mark VIIE
Northrop Grumman Laser Systems (Apopka, FL)



Vector 21

Mark VII



Mark VIIE

TRIGR

Lightweight Laser Designator Rangefinder (LLDR), AN/PED-1

MISSION

Provide the dismounted Fire Support Teams, Combat Observation and Lasing Teams, and Scouts with a precision target location and laser designation system that allows them to call for fire using precision, near-precision and area munitions.

The **AN/PED-1 Lightweight Laser Designator Rangefinder (LLDR)** is a crew-served, man-portable, modular target locator and laser designation system. The primary components are the Target Locator Module (TLM) and the Laser Designator Module (LDM).

The TLM incorporates a thermal imager, day camera, laser designator spot imaging, electronic display, eye-safe laser rangefinder, digital magnetic compass, Selective Availability/Anti-Spoofing Module Global Positioning System (SAASM GPS), and digital export capability. The original LLDR 1 operates on one BA-5699 battery, but it can also use a Single Channel Ground and Airborne Radio System (SINCGARS) battery when laser designation is not required. A new compact laser designator is being fielded with the LLDR 2, which requires less power and operates on one common SINCGARS battery (BA-5390 or BA-5590). To provide a precision targeting capability to the dismounted Soldier, PM SPTD has developed the LLDR 2H, which integrates a celestial navigation system with the digital magnetic compass in the TLM to provide highly accurate target coordinates to allow the Soldier to call for fire with precision GPS guided munitions.

The TLM can be used as a stand-alone device or in conjunction with the LDM. At night and in obscured battlefield conditions, the operator can recognize vehicle-sized targets at more than 3 kilometers. During day operations, targets can be recognized at more than 7 kilometers. The LDM emits coded laser pulses compatible with DoD and NATO laser-guided munitions. Targets can be designated at ranges greater than 5 kilometers.

Weight (total system): 35 pounds (LLDR 1), less than 30 pounds (LLDR 2), and less than 32 pounds (LLDR 2H) for a 24-hour mission

PROGRAM STATUS

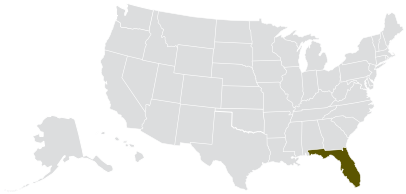
- ✓ **FY11** Completed fielding of LLDR 1
- ✓ **FY11** Began fielding reduced weight LLDR 2 to units supporting Operation Enduring Freedom (OEF)
- ✓ **FY11** Awarded a delivery order for high accuracy LLDR 2H production

PROJECTED ACTIVITIES

- \+ **FY12** Continue fielding LLDR 2 in accordance with Headquarters, Department of the Army guidance
- \+ **FY12** Award a new contract to retrofit existing LLDRs (1 & 2) to the high-accuracy LLDR 2H configuration
- \+ **FY12** Accept first deliveries of the LLDR 2H and begin fielding

CONTRACTORS

Northrop Grumman Guidance and Electronics, Laser Systems (Apopka, FL)



Lightweight Laser Designator Rangefinder 1

Lightweight Laser Designator Rangefinder 2

Joint Effects Targeting System (JETS)

MISSION

Provides the dismounted Forward Observer and Joint Terminal Attack Controller the ability to acquire, locate, mark, and designate for precision GPS guided and laser-guided munitions, and provides connectivity to the Joint forces through fire and close air support digital planning/messaging devices.

The **Joint Effects Targeting System (JETS)** is an Army led, joint interest program with the Air Force (USAF), and Marine Corps to develop and field a one-man portable targeting system for forward observers and Joint Terminal Attack Controllers (JTACS).

This future system will answer the need for a very lightweight, highly accurate targeting system that will allow target engagements with precision munitions (e.g., JDAM, Excalibur, and laser-guided weapons) and provide crucial digital connectivity to request and control indirect fires and close air support from all joint assets. The JETS' light weight will allow small units supported by Army forward observers or JTACs to have access to precision targeting in all operational environments.

The JETS consists of two major subsystems: the **Target Location Designation System (TLDS)** and the **Target Effects Coordination System (TECS)**.

The TLDS will provide the dismounted observer and JTAC with a common enhanced lightweight hand-held capability to rapidly acquire, accurately locate, positively identify, and precisely designate targets. The TECS will interface with the TLDS and will provide a networked, automated communications capability to plan, coordinate, and deliver fire support, as well as provide terminal close air support guidance. Based on the strategy approved in FY11 by the Army Acquisition Executive and endorsed by the Joint Fire Support Executive Steering Committee (JFS ESC), the TECS requirement will be satisfied by continued development of existing Service-specific forward entry systems that will comply with a Joint common minimum messaging set.

PROGRAM STATUS

- ✓ **FY11** Technology Development activities for JETS TLDS in preparation for Milestone B
- ✓ **FY11** Approval of TECS development strategy

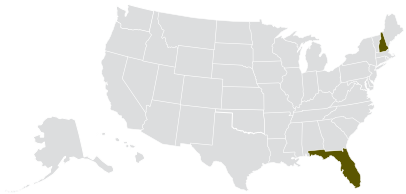
PROJECTED ACTIVITIES

- \+ **FY13** Milestone B decision for JETS TLDS
- \+ **FY16** Initial Operational Capability for JETS TLDS

CONTRACTORS

BAE Systems (Nashua, NH)

Northrop Grumman Guidance and Electronics, Laser Systems (Apopka, FL)



Joint Effects Targeting System (JETS)
Target Location Designation System (TLDS)

Small Tactical Optical Rifle Mounted (STORM) Micro-Laser Rangefinder (MLRF), AN/PSQ-23

MISSION

Enables determination of distant target and terrain locations with laser rangefinding and digital direction finding.

The **AN/PSQ-23 Small Tactical Optical Rifle Mounted (STORM) Micro-Laser Rangefinder (MLRF)** is a lightweight, multifunctional laser system designed to operate on individual and crew served weapons and the Stryker Remote Weapons Station. It combines the functionality of a laser rangefinder, the AN/PEQ-2A Infrared Aiming Laser and Illuminator, the Multiple Integrated Laser Engagement System, a digital compass, and a visible pointer into a single system. Combined with a Precision Lightweight GPS Receiver or a Defense Advanced GPS Receiver, the system can compute and display highly accurate target locations.

Weight: 1.2 pounds with batteries
Endurance: >2,000 ranging events

PROGRAM STATUS

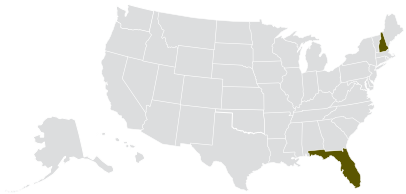
- ✓ **FY11** Continue to field in accordance with Headquarters, Department of the Army guidance
- ✓ **FY11** Awarded follow-on contracts

PROJECTED ACTIVITIES

- \+ **FY12** Continue to field in accordance with Headquarters, Department of the Army guidance

CONTRACTORS

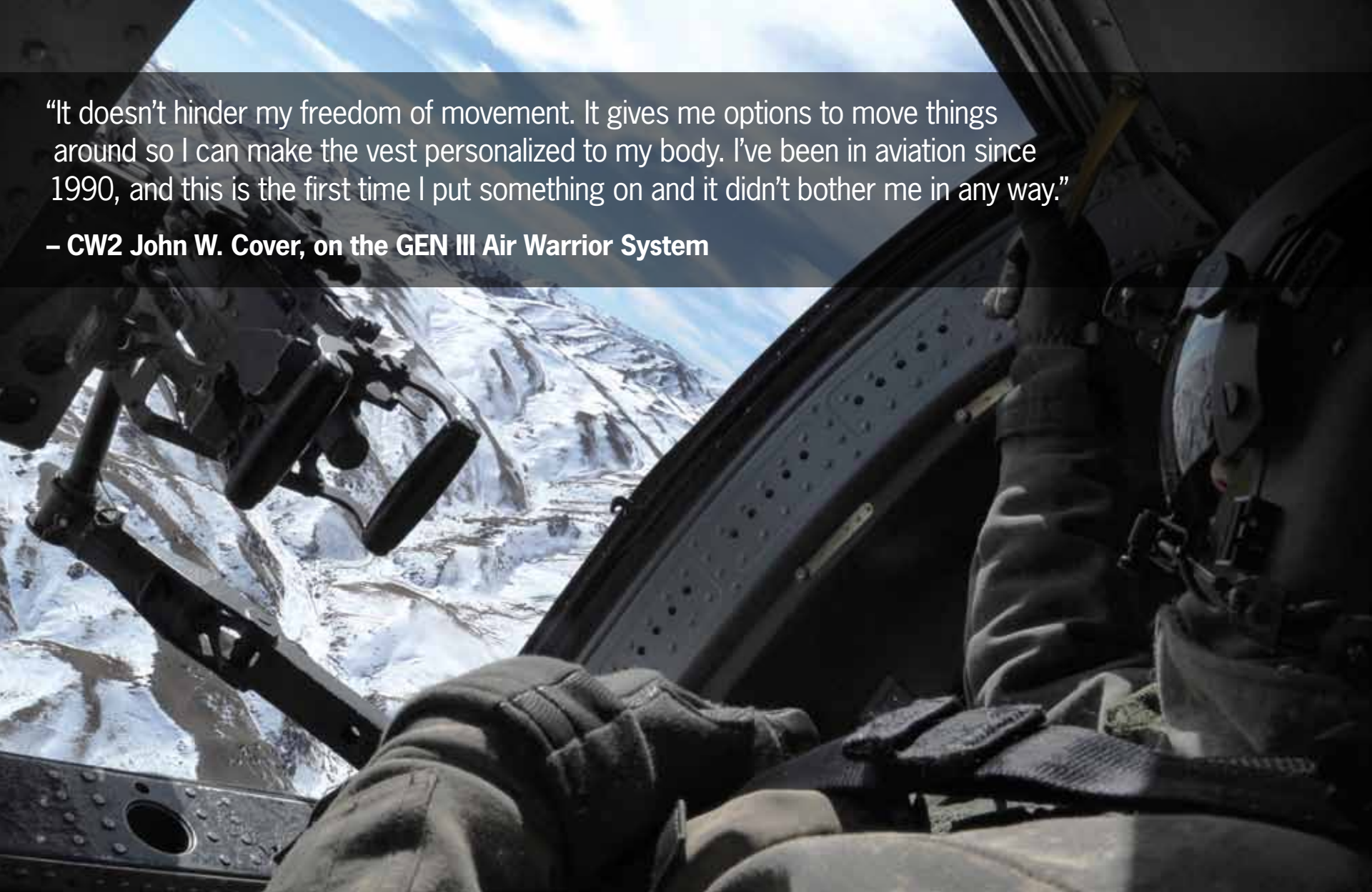
Insight Technology Inc. (Londonderry, NH)
DRS Optronics (Melbourne, FL)



Project Manager Soldier Warrior (PM SWAR)

Product Manager Air Warrior
Product Manager Ground Soldier
Product Manager Mounted Soldier System

PM SWAR supports Soldiers through the acquisition of integrated Soldier systems. Current systems include Land Warrior, Nett Warrior, Mounted Soldier, and Air Warrior. PM SWAR product managers develop and integrate components into complete systems designed to increase Soldiers' situational awareness and combat effectiveness, decrease combat load, and improve mission flexibility.



"It doesn't hinder my freedom of movement. It gives me options to move things around so I can make the vest personalized to my body. I've been in aviation since 1990, and this is the first time I put something on and it didn't bother me in any way."

– CW2 John W. Cover, on the GEN III Air Warrior System

PRODUCT MANAGER AIR WARRIOR (PM AW)

PM AW integrates all aviation life support and mission equipment into an ensemble that improves the combat effectiveness of the Army aircrew member. This system leverages several joint service technology efforts to create a modular system that increases situational awareness and freedom of movement at the flight controls, enhances mobility to safely operate aircraft systems, reduces physiological stress, facilitates aircraft entry and exit, and provides survival gear in the event that an aircraft goes down over land or water.

The **Electronic Data Manager (EDM)** is a touch-screen computer system in a kneeboard configuration that puts advanced digital tools directly into the hands of Army aviators. It provides GPS moving map navigation, over-the-horizon messaging, increased situational awareness with Blue Force Tracking, mission planning, and aircraft performance planning information.

The **Portable Helicopter Oxygen Delivery System (PHODS)** is a lightweight, wearable device that provides oxygen to Soldiers without restricting their movements in and around their aircraft. It replaces the Helicopter Oxygen System, which weighed more than 100 pounds and could not be fitted on all Army rotary wing aircraft.

Air Warrior (AW)

MISSION

Provides enhanced mission effectiveness, leveraging clothing and equipment to maximize aircrew member survivability.

Air Warrior (AW) is a modular, integrated, rapidly reconfigurable combat aircrew ensemble that saves lives and maximizes Army aircrew mission performance. Previous aviation life support equipment consisted of a non-integrated assemblage of protective and survival gear. AW uses a systems approach to equipping the aircrew and closes the capability gap between human and machine. Fielded incrementally in blocks to rapidly provide enhanced capabilities to the warfighter, AW leverages and integrates clothing and equipment, such as the Army Aircrew Combat Uniform and ballistic protection, from other product managers.

AW includes:

- Survival Equipment Subsystem, which integrates first aid, survival, signaling, and communications equipment with body armor and over-water survival subsystems
- Microclimate Cooling System, which increases effective mission duration in heat-stress environments by more than 350 percent
- Aircrew Integrated Helmet System, a lighter helmet with increased head and hearing protection
- Electronic Data Manager, a portable digital mission planning device for over-the-horizon messaging and enhanced situational awareness capabilities through connectivity to Blue Force Tracking-Aviation
- Encrypted Aircraft Wireless Intercom System (EAWIS) for secure cordless, hands-free aircrew communications
- Survival Kit, Ready Access, Modular (SKRAM) Go Bag with integrated hydration
- Portable Helicopter Oxygen Delivery System, a Soldier-worn supplemental breathing oxygen system for high-altitude operations
- Communication Enhancement and Protection System (CEPS), provides helmet hear-through capability

PROGRAM STATUS

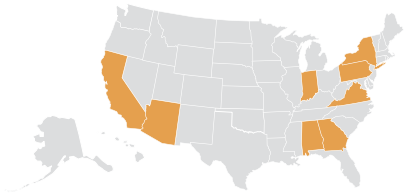
- ✓ **FY09** Fielded Air Warrior Increment III systems
- ✓ **FY10** Fielding of the CEPS and SKRAM
- ✓ **FY11** EAWIS Production

PROJECTED ACTIVITIES

- \+ **FY12** Continue fielding and reset of Air Warrior to deploying units

CONTRACTORS

BAE Systems (Phoenix, AZ)
Aerial Machine and Tool Corp. (Vesta, VA)
Westwind Technologies Inc. (Huntsville, AL)
Carleton Technologies Inc. (Orchard Park, NY)
Raytheon Technical Services (Indianapolis, IN)
Secure Communication Systems Inc. (Santa Ana, CA)
Telephonics Corp. (Farmingdale, NY)
General Dynamics C4S (Scottsdale, AZ)
Science & Engineering Services Inc. (Huntsville, AL)
US Divers (Vista, CA)
Communications & Ear Protection Inc. (Enterprise, AL)
Gentex Corporation (Simpson, PA)
Flight Suits (El Cajon, CA)
Fellfab (Atlanta, GA)



Primary Survival Gear Carrier (PSGC)

Air Soldier System (AirSS)

Building on the legacy Air Warrior gear carriage and clothing system, the **Air Soldier System (AirSS)** focuses on improving aircrew survivability and mission effectiveness by reducing weight and torso bulk, improving situational awareness, and increasing rear crew member mobility.

The first delivery of AirSS capability in FY13 will feature optimized, multifunctional survival equipment and standardized survival gear components, 25% reduced bulk and weight, a Modular Aircrew Common Helmet (MACH) with improved head impact protection, and a Wearable Environmental Control System (WECS) powered by an Integrated Wearable Power Source.

The WECS will eliminate the cooling system umbilical for UH-60 and CH-47 nonrated crew members. The AirSS will also feature enhanced SA/C3 capabilities to achieve JBC-P interoperability. Initial implementation of terrain/obstacle avoidance capability will be through the AW Electronic Data Manager.

The first AirSS development contract award is expected FY12. Subsequent delivery of added capabilities will further reduce bulk and weight, improve crewmember SA and mission effectiveness and duration.

PROGRAM STATUS

- ✓ **3QFY11** Materiel Development Decision (MDD) signed by the Assistant Secretary of the Army (Acquisition, Logistics and Technology)

PROJECTED ACTIVITIES

- + **FY12** Milestone B
- + **FY13** Milestone C

CONTRACTORS

TBD

Encrypted Aircraft Wireless Intercom System (EAWIS)

MISSION

Enhances aircrew safety by delivering wireless communication between crew members in and around the aircraft during missions.

The **Encrypted Aircraft Wireless Intercom System (EAWIS)** is a joint effort with the U.S. Navy that provides increased safety and mission performance. For aircrews operating in and around aircraft, the EAWIS eliminates the mobility restrictions and safety hazards inherent to tethered intercoms. The hands-free mode increases safety in high-risk search and rescue, nighttime, and rescue hoist operations. The system also improves communications and safety during operations such as refueling, loading, offloading, and re-arming.

EAWIS supplements the current aircraft corded intercom system for both flight and ground operations for the Army's CH-47 and HH/UH-60 aircraft, and the Navy's CH-46, SH-60, and CH/HH-53 aircraft. The system consists of one aircraft-mounted interface unit and a mobile transceiver worn by the crew member.

The system has a full duplex voice-activated mode, hands-free mode, and a push-to-talk mode. It features NSA Type 1 encryption, 50 independent channels (aircraft networks) with up to six crew members on each aircraft network able to hear and talk simultaneously. EAWIS enables simultaneous omni-directional communications among all users in the aircraft network within 200 feet of the center of the aircraft.

PROGRAM STATUS

- ✓ **4QFY10** Milestone C approved for Low Rate Initial Production
- ✓ **1QFY11** National Security Agency encryption certification
- ✓ **1QFY11** Low Rate Initial Production Contract
- ✓ **1QFY11** Operational testing for UH-60A/L Blackhawk
- ✓ **2QFY11** First unit equipped UH-60A/L
- ✓ **3QFY11** Operational testing for CH-47D Chinook

PROJECTED ACTIVITIES

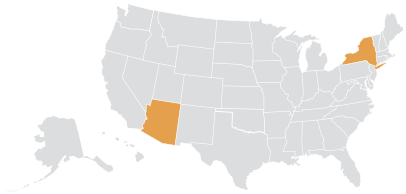
- + **4QFY11** Operational testing for HH-60A/L
- + **4QFY11** Operational testing for UH-60M
- + **1QFY12** Operational testing for CH-47F
- + **1QFY12** Full-rate production contract

Aircraft access point

Aircrew mobile equipment

CONTRACTORS

Telephonics Corp. (Farmingdale, NY)
General Dynamics C4S (Scottsdale, AZ)



PTT

Aircrew Integrated Helmet System (AIHS), HGU-56/P

MISSION

Increases mission effectiveness for aircrew members with a lightweight helmet that offers improved comfort, impact protection, and sound retention and attenuation.

The **HGU-56/P Aircrew Integrated Helmet System (AIHS)** is made of an advanced composite of graphite and Spectra (a high-performance polyethylene) and is available in six sizes to fit male and female crew members. The AIHS HGU-56/P is 15 to 20 percent lighter than the SPH-4 flight helmet it replaced.

Weight: 3 pounds
Impact protection: 150 G
Chinstrap retention: 440 pounds
Acoustic protection: 82 decibels permitted

The AIHS HGU-56/P includes:

- Communication Ear Plugs, fielded in 2002, which provide increased speech intelligibility and increased sound attenuation
- Maxillofacial Shield, fielded in 2003, which provides fragmentation protection to the face

PROGRAM STATUS

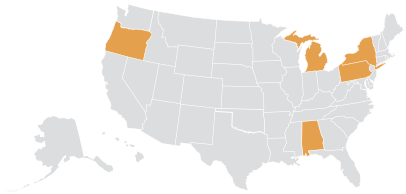
- ✓ **4QFY08** Approved alternate helmet liners (Zeta II by Oregon Aero and the Super Comfort Liner by Gentex); new liners provided Aviation Life Support Equipment technicians additional options in fitting aircrew with comfortable and stable helmets
- ✓ **4QFY08** Supported impact testing of modified HGU-56/P helmets at the U.S. Army Aeromedical Research Lab to provide safety of flight data for the Apache Block III program
- ✓ **3QFY09** Supported PM Apache flight test of the HGU-56/P with a magnetic head tracker in the Apache Block III test program
- ✓ **3QFY09** Staff engineering change proposal to change paint color from Aircraft Green to Foliage Green; new color matches Army Aircrew Combat Uniform and provides low infrared signature/increased survivability, and cooler (lower temperature) helmet
- ✓ More than 18,000 systems fielded to date; operations and support (sustainment) phase of life cycle

PROJECTED ACTIVITIES

+ **FY12** Continue operations and support

CONTRACTORS

Gentex (Simpson, PA)
Telex Communications Co. (Buchanan, MI)
Astrocom Electronics Inc. (Colliersville, NY)
Communications & Ear Protection Inc. (Enterprise, AL)
Oregon Aero (Scappoose, OR)



Communication Ear Plugs (CEP), and Communications Enhancement and Protection System (CEPS)

MISSION

Provides improved sound attenuation and speech intelligibility for Army aircrew.

Communication Ear Plugs (CEP) are a pair of small sound transducers paired with hollow foam ear tips. The foam ear tips increase the sound attenuation already provided by the ear cups on the HGU-56/P Aircrew Integrated Helmet System (AIHS), and the sound transducers provide a clear signal through the hollow foam ear tips. As a result, the Soldier hears clear communications that are not degraded by ambient noise. CEP were initially added to HGU-56/P helmets through a modification work order and are now integrated into new helmets during production.

The **Communications Enhancement and Protection System (CEPS)** is a commercial off-the-shelf enhancement to the CEP that allows dismounted aircrew to hear and localize sounds during escape and evade actions while wearing the HGU-56/P AIHS. Dual communication earplugs are connected to a pair of tiny sensitive microphones that are mounted on the helmet's ear domes. A toggle switches the audio input from the aircraft communications to the ear dome microphones. A gain switch allows the Soldier to adjust audible noise levels.

PROGRAM STATUS

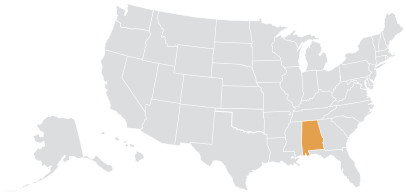
- ✓ **FY08** Replenishment of HGU-56/Ps with factory-installed CEP
- ✓ **2QFY09** Safety-of-flight testing of the CEPS conducted
- ✓ **FY10** Initial procurement and fielding of the CEPS
- ✓ **FY11** Fielded CEPS

PROJECTED ACTIVITIES

- + **FY12** Continue operations and support for CEP
- + **FY12** Continue to field CEPS

CONTRACTORS

Communications & Ear Protection Inc. (Enterprise, AL)



Apache Aircrew Integrated Helmet (AAIH)

MISSION

Provides the safety and protection performance of the Aircrew Integrated Helmet System (AIHS) to the Apache Block III (AB3) community.

By utilizing the **Apache Aircrew Integrated Helmet (AAIH)** as the helmet platform for the AB3 Improved Magnetic Reciever Unit (IMRU) helmet tracker, the Army has brought a safer, common helmet to the Apache community.

PROGRAM STATUS

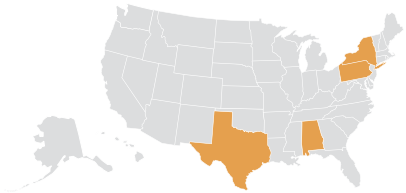
- ✔ **3QFY11:** AAIH Low Rate Initial Production (LRIP) contract

PROJECTED ACTIVITIES

- \+ **FY12:** Continue Technical and Logistic support to AB3
- \+ **1QFY12:** AAIH LRIP Deliveries
- \+ **3QFY12:** Initial Operator's Test (IOT) in Airframe

CONTRACTORS

Elbit Systems of America (ESA) (Fort Worth, TX)
Elbit Systems Limited (Haifa, Israel)
Gentex (Simpson, PA)
Astrocom Electronics Inc. (Colliersville, NY)
Communications & Ear Protection Inc. (Enterprise, AL)



Electronic Data Manager (EDM)

MISSION

Enables aircrew members to plan missions quickly and to react to mission changes while in flight.

The **Electronic Data Manager (EDM)** is a light, portable touch-screen computer in the form of a kneeboard that provides the aviator with global positioning system (GPS) moving map capabilities, sunlight readability, and the ability to use Windows-based software.

The EDM includes:

- Moving map display (GPS aircraft position and waypoints)
- Tactical graphics
- Two-way Blue Force Tracking-Aviation situational awareness
- Beyond-line-of-sight text messaging
- Displays of checklists, manuals, and approach plates in PDF format
- Capability to import mission planning data from Aviation Mission Planning Systems software
- Weight and balance calculations
- Aircraft performance planning calculations
- Electronic notes

EDM Spiral 3.5 improvements include:

- 1.6 GHZ System Processor
- 2 GB RAM
- 6.4" Sealed Trans-reflective Glass Touch Screen 480x640
- Sunlight Readable and NVG Compatible Display
- 60 GB Solid State Hard Drive
- External Power, Ethernet, and USB 2.0 interfaces-enhanced speed and performance
- Ability to host dynamic terrain and obstacle avoidance

PROGRAM STATUS

- ✓ **3QFY08** Spiral 3 EDM fielding
- ✓ **FY10** Spiral 3.5 testing begins
- ✓ **FY11** Began fielding Dual EDM and GPS Message Router (UH-60A/L and CH-47D)
- ✓ **FY11** Began testing of weather display and dynamic terrain and obstacle avoidance capabilities
- ✓ **FY11** Reset of units prior to deployment

PROJECTED ACTIVITIES

+ **FY12** Continue fielding dual EDMs

CONTRACTORS

Raytheon Technical Services (Indianapolis, IN)
Secure Communication Systems Inc. (Santa Ana, CA)

Survival Kit, Ready Access, Modular (SKRAM)

MISSION

Provides airworthy and readily accessible life-support equipment and water in a fire-resistant and modular configuration.

The **Survival Kit, Ready Access, Modular (SKRAM)** components, tie-downs, and A-kits provide airworthy and readily accessible carriage for a 72-hour suite of life support equipment and mission water in a flame-retardant, modular, and configurable backpack. The SKRAM components improve mission endurance by providing drinking water and supplemental survival gear for an escape and evade scenario. The SKRAM is mounted on the aircraft to provide rapid access to mission-essential survival gear. During an emergency egress, the SKRAM can be quickly released for use in a survival and evasion environment.

A-kit installation provides platform-specific mounting hardware for the SKRAM.

The SKRAM Go Bag is sized to contain both the Aviation Life Support Equipment (ALSE) mandatory minimum gear and 100 ounces of water; a second Go Bag provides carriage for additional mission-specific gear. Two M-4 magazine pouches are also provided for carrying additional ammunition.

The SKRAM and tie-down straps are unit-issue, with the tie-down being configured specifically per platform. Tie-downs at approved anchorage sites on the aircraft are capable of securing the SKRAM configuration for up to a 40 G crash load.

SKRAM carriage capability requirements include:

- Additional ammunition
- Insertable on-the-go hydration system
- Rapid Fielding Initiative Modular Sleep System
- Mandatory minimum ALSE gear, including food and water
- Additional environmental gear
- In-line filter for on-the-go purification
- Chlorine tablets for water sterilization

PROGRAM STATUS

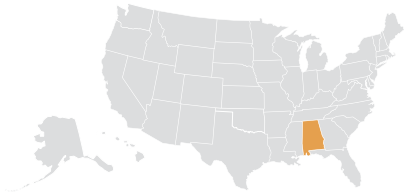
- ✓ **2QFY09** Completed specification and technical data package
- ✓ **3QFY09** Completed A-kit design and testing for UH-60 and CH-47
- ✓ **1QFY11** Award of competitive production contract

PROJECTED ACTIVITIES

- \+ **FY11** Begin production and fielding

CONTRACTORS

Fellfab (Atlanta, GA)



Heads-Up Display (HUD) System, AN/AVS-7(V)

MISSION

Provides pilots with flight symbology while using the Aviator's Night Vision Imaging System during night flight operations.

The **AN/AVS-7(V) Heads-Up Display (HUD)** takes aircraft data from numerous sensors, converts it to graphic files, and provides critical operational information superimposed as symbology onto the image the pilot sees through the Aviator Night Vision Imaging System. The HUD minimizes the need for pilots to examine cockpit instrument data, thus providing increased situational awareness outside the aircraft. The HUD system consists of the A-kit, which is the wiring harnesses, mounting brackets, and some additional sensors such as air data transducers, inclinometers, and thermocouple amps; and a B-Kit, which consists of one CV-4229(V) X/ AVS-7 signal data converter; one C-12293/AVS-7 converter control unit; and two SU-180/ AVS-7 display units. There is also an improved flat-panel display unit, which can replace the cathode ray tube SU-180s on the legacy platforms. In addition, there is a day flat panel display to give additional situational awareness capabilities. Both flat panel displays can plug and play with legacy systems.

PROGRAM STATUS

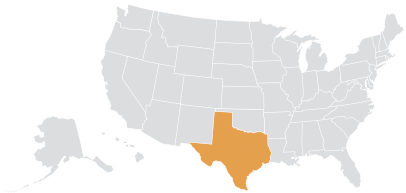
- ✓ **FY08** Successfully completed testing with a new flat panel night display unit as a replacement for the current system
- ✓ **FY10** Continued procurement and installation for the UH-60M and CH-47F, the Navy's MH-60S, and several Coast Guard platforms
- ✓ **FY11** Procure and field new flat panel displays

PROJECTED ACTIVITIES

- \+ Continue to sustain systems for the Army, Navy, Air Force, Marine Corps, and Coast Guard

CONTRACTORS

BAE Systems (Austin, TX)
EFW Inc. (Fort Worth, TX)
Elbit Systems Ltd. (Haifa, Israel)



Laser Eye Protection Visor

MISSION

Protects aircrew members' eyes from low-energy laser threats and hazards.

The **Laser Eye Protection Visor** is a family of polycarbonate ballistic visors that protect aircrews' eyes from primary laser threats and hazards.

PROGRAM STATUS

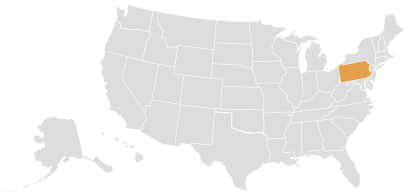
- ✔ **FY09** Laser visors fielded; in sustainment

PROJECTED ACTIVITIES

- \+ In sustainment

CONTRACTORS

Gentex Optics Inc. (Carbondale, PA)



Maxillofacial Shield (MFS)

MISSION

Provides aircrew with facial ballistic protection from fragments and structure impacts.

The **Maxillofacial Shield (MFS)** protects Army aircrew members from ballistic threats and also provides improved field of view and anti-fogging capabilities over the previous MFS design. It is to be used with the Aircrew Integrated Helmet System (AIHS) HGU-56/P helmet. It is compatible with visors, the Aviator Night Vision Imaging System, Communication Ear Plugs, Communication Enhancement and Protective System, spectacles, microphones, and lip lights.

PROGRAM STATUS

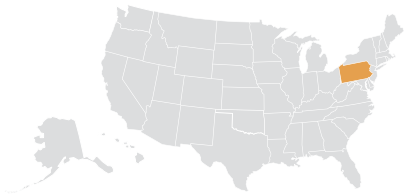
- ✓ **FY10** Current AIHS HGU-56/P helmet is in sustainment phase of life cycle; the MFS is one of the AIHS helmet modules

PROJECTED ACTIVITIES

- \+ **FY12** Continue sustainment and reset of deploying units

CONTRACTORS

Gentex (Carbondale, PA)



HAND
HOLD

Microclimate Cooling System (MCS)

MISSION

Protects the individual aircrew member from heat stress injuries in hot weather environments or while wearing chemical and biological protective clothing.

The **Microclimate Cooling System (MCS)** reduces heat stress to Army helicopter crew members, especially while they are wearing chemical and biological protective equipment in hot weather. The MCS gives Army aviators an increase of more than 350 percent (from 1.6 hours to 5.7 hours) in heat-stress mission endurance times while they are wearing chemical protective equipment or other crew member clothing.

The MCS includes a quick-disconnect function to allow aircrew members to safely and quickly exit an aircraft without a snagging hazard. The MCS includes a Microclimate Cooling Garment, a vest worn as an undergarment, and a small Microclimate Cooling Unit, which is an autonomous vapor compressor system that chills water and pumps it through small tubes embedded in the vest. The vest is worn beneath chemical protective clothing or other crew member clothing.

PROGRAM STATUS

- ✔ Currently in production and deployment phase
- ✔ Fielding complete

PROJECTED ACTIVITIES

- \+ **FY12** Continue use in ground vehicle applications

CONTRACTORS

Carleton Technologies Inc. (Orchard Park, NY)
Gibson and Barnes (Santa Clara, CA)
Westwind Technologies Inc. (Huntsville, AL)

Portable Helicopter Oxygen Delivery System (PHODS)

MISSION

Provides the Soldier with compressed oxygen to altitudes above 10,000 feet.

The **Portable Helicopter Oxygen Delivery System (PHODS)** is a Soldier-worn portable oxygen system that delivers compressed oxygen from a lightweight steel oxygen bottle attached to the Air Warrior vest. The system provides oxygen via a nasal cannula, up to 18,000 feet, and via a mask at altitudes above 18,000 feet. PHODS provides supplemental oxygen without restricting movement in and around the aircraft. The system uses a battery-powered pulse-demand oxygen regulator unit that automatically provides on-demand oxygen regulated to altitude based on detected barometric pressure. The PHODS regulator includes algorithms to detect and react to the aviator's breathing patterns to ensure that the user is receiving the proper oxygen flow based on individual physiological constraints.

The Soldier-worn PHODS components weigh six pounds, compared with the legacy Helicopter Oxygen System (HOS), which weighed more than 100 pounds. PHODS also improves mission capability in that each individual system can be replaced if there is a mechanical issue. Mechanical problems with the HOS meant the aircraft could not execute high altitude operations.

PHODS is supported by a mobile oxygen generating/recharge station that is provided to designated units. The station combines the high pressure and variable flow rate available from an oxygen cylinder with the oxygen generation and replenishment of an oxygen concentrator. By simply connecting an empty oxygen cylinder, it will automatically refill. These mobile stations have the added benefit of being easily transported to battlefield locations.

PROGRAM STATUS

- ✓ **1QFY06–2QFY08** Operational and environmental testing by 160th Special Operations Aviation Unit, U.S. Army Aeromedical Research Laboratory and Redstone Technical Test Center
- ✓ **2QFY08** Developmental Test Command issued safety confirmation
- ✓ **2QFY08** Army Evaluation Center issued abbreviated system safety assessment
- ✓ **3QFY08** Aviation Engineering Directorate issued conditional air worthiness release pending training package assessment (part of solicitation)
- ✓ **3QFY08** Air worthiness release
- ✓ **3QFY08** PEO Soldier production decision
- ✓ **4QFY08** Production contract
- ✓ **4QFY08** Received initial delivery of 50 systems
- ✓ **2QFY09** Started fielding to units in Afghanistan
- ✓ **FY11** Support deployed/deploying units

PROJECTED ACTIVITIES

- + **FY12** Continue support

CONTRACTORS

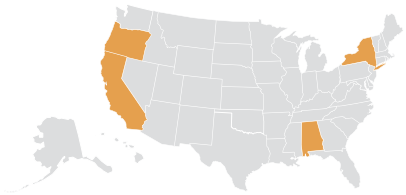
US Divers (Vista, CA)

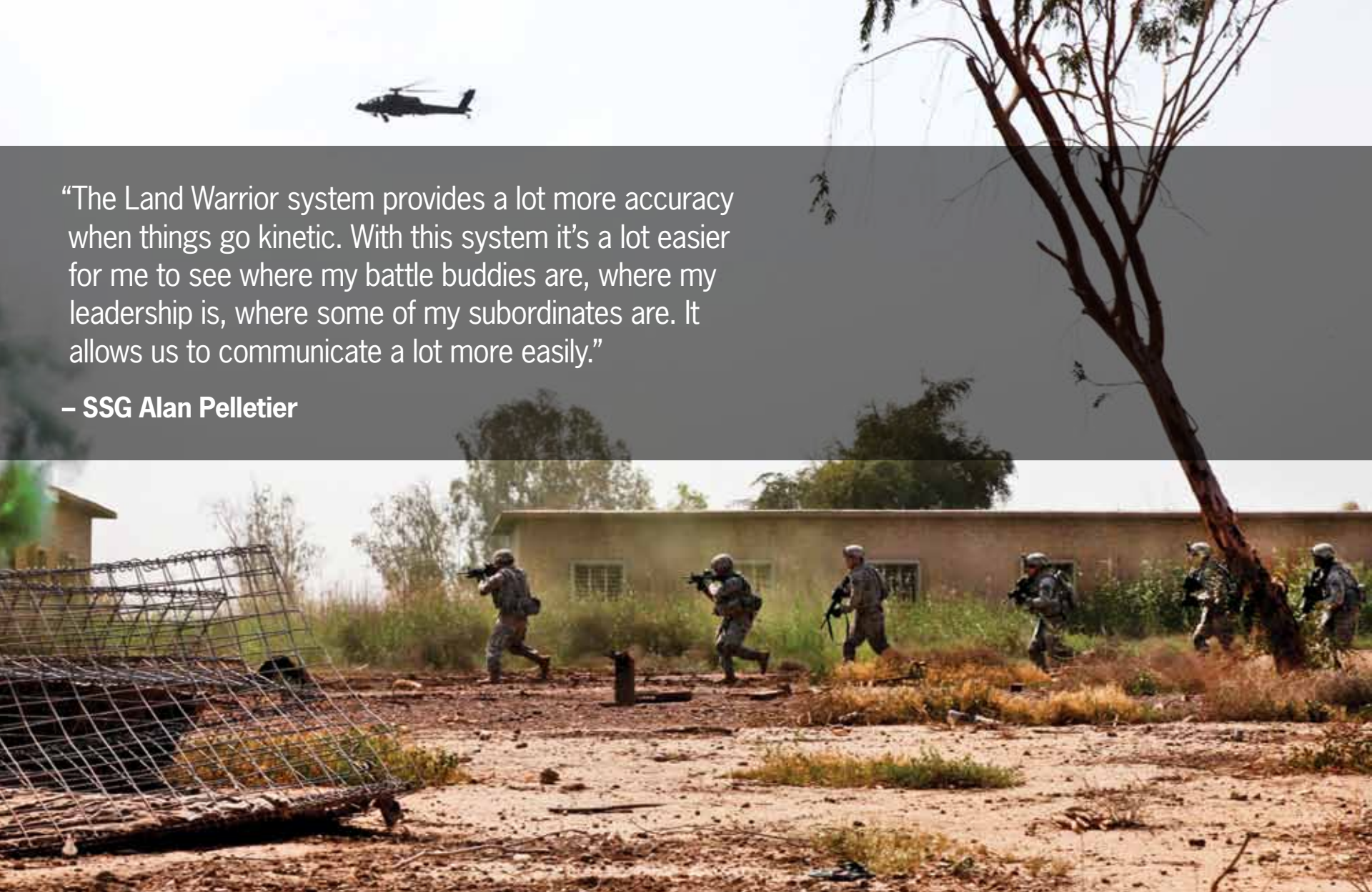
Oxygen Generating Systems International (Buffalo, NY)

Mountain High Equipment & Supply Co. (Redmond, OR)

Gentex Corp. (Rancho Cucamonga, CA)

Taylor-Wharton (Huntsville, AL)





"The Land Warrior system provides a lot more accuracy when things go kinetic. With this system it's a lot easier for me to see where my battle buddies are, where my leadership is, where some of my subordinates are. It allows us to communicate a lot more easily."

– SSG Alan Pelletier

PRODUCT MANAGER GROUND SOLDIER (PM GS)

PM GS provides unprecedented situational awareness and battle command to the dismounted Soldier through Land Warrior (LW) and Nett Warrior (NW). Digital imagery and GPS locations provided by LW and NW enable thorough mission planning, ramp-side convoy briefings, and on-the-fly changes during missions for high-value targets (HVTs). LW and NW allow teams, squads, and platoons to pinpoint the location of improvised explosive devices (IEDs), cells, or HVTs with improved speed and precision. LW and NW enhance dismounted Soldiers' survivability by rapidly disseminating locations of suspected enemy IEDs and snipers. LW and NW also help prevent fratricide by providing locations of mounted forces and dismounted friendly Soldiers.

Land Warrior (LW) is a Soldier-worn advanced navigation and network communications tool that increases situational awareness and communications between units. With LW, Soldiers can move more quickly, operate more safely, and target with greater accuracy.

Nett Warrior, the successor to Land Warrior, features significant improvements in usability, size and weight.

Land Warrior (LW)

MISSION

Provides unprecedented Soldier tactical awareness and significant improvements in lethality, survivability, mobility, and sustainability.

The **Land Warrior (LW)** system currently deployed is a second-generation integrated modular fighting system for dismounted Soldiers that combines state-of-the-art technologies to create a lethal, survivable Soldier system linked to the digital battlefield. Land Warrior integrates a computer, helmet-mounted display, advanced GPS navigation, and an Enhanced Position Location Reporting System-based voice/data networked radio that allows Soldiers to see their location, see the location of friendly forces in real time, and exchange vital tactical information, giving equipped Soldiers a decisive advantage. The system's approach optimizes and integrates multiple capabilities with minimal impact on the Soldier's combat load and logistical footprint. Land Warrior is interoperable with Force XXI Battle Command Brigade and Below (FBCB2).

Land Warrior was successfully used for the first time in combat by the 4th Battalion, 9th Infantry Regiment (4-9 IN), 4th (Stryker) Brigade, 2nd Infantry Division during its deployment to Iraq from April 2007 through June 2008. In 2009, Land Warrior was fielded to the 5th Stryker Brigade Combat Team (SBCT), 2nd Infantry Division for its deployment in support of Operation Enduring Freedom (OEF). The 2nd Stryker Cavalry Regiment received the LW equipment from 5/2 ID (SBCT) in 2010. Currently, LW is fielded to an SBCT in OEF.

PROGRAM STATUS

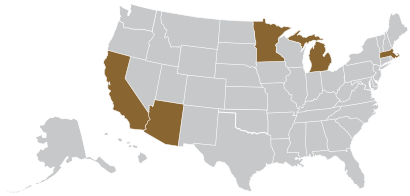
- **3QFY07–3QFY08** Accompanied and supported 4-9 IN in Operation Iraqi Freedom
- **1QFY09** Provided Land Warrior systems in support of Army Expeditionary Warrior Experiment at Fort Benning, GA
- **1QFY09** Provided Land Warrior systems in support of Army Experimental Task Force at Fort Bliss, TX (Evaluations held 4QFY10 and 3QFY11)
- **3QFY09** Fielded LW to 5/2 ID SBCT in accordance with validated Operational Need Statement
- **4QFY09–FY10** Supported LW systems for 5/2 ID SBCT in OEF
- **2Q-3QFY10** Provided New Equipment Training to 2nd Stryker Cavalry Regiment, Vilseck, Germany3QFY10-3QFY11 Supported LW systems for 2nd Stryker Cavalry Regiment in OEF
- **1QFY11** Provided New Equipment Training to an SBCT, Fort Wainwright, Alaska
- **1QFY11** Provided support to Project Manager (PM) Stryker for Double-V Hull (DVH) planning

PROJECTED ACTIVITIES

- Now supporting LW systems for 1/25 SBCT in OEF
- Continue LW support to Army Expeditionary Warrior Experiment (AEWE) at Ft Benning, GA
- Continue LW support as the NW Surrogate to Network Integration Evaluation (formerly AETF) at Ft BLiss, TX (NIEs planned: 1Q&3QFY12)
- Continue support to PM Stryker to execute Double-V Hull SWAP in OEF

CONTRACTORS

General Dynamics (Scottsdale, AZ; Taunton, MA)
General Dynamics Land Systems (Sterling Heights, MI)
Benchmark Electronics (Rochester, MN)
Raytheon (Fullerton, CA)
Rockwell Collins (Carlsbad, CA)



Nett Warrior (NW)

MISSION

Provides overmatch operational capabilities to all ground combat Soldiers and small unit operations.

The **Nett Warrior (NW)** is an integrated dismounted leader situational awareness (SA) system for use during combat operations. The system provides unparalleled SA to the dismounted leader, allowing for faster and more accurate decisions in the tactical fight. With advanced navigation, SA, and information sharing capabilities, leaders are able to avoid fratricide and are more effective and more lethal in the execution of their combat missions.

The NW program focuses on the development of the SA system, which has the ability to graphically display the location of an individual leader's location on a digital geo-referenced map image. Additional Soldier and leader locations are also displayed. NW is connected through a secure radio that will send and receive information from one NW to another, thus connecting the dismounted leader to the network. These radios will also connect the equipped leader to higher echelon data and information products to assist in decision making and situational understanding. Soldier position location information will be added to the network via interoperability with the Army's Rifleman Radio capability. All of this will allow the leader to easily see, understand, and interact in the method that best suits the user and the particular mission.

NW will optimize and integrate capabilities while reducing the Soldier's combat load and logistical footprint.

PROGRAM STATUS

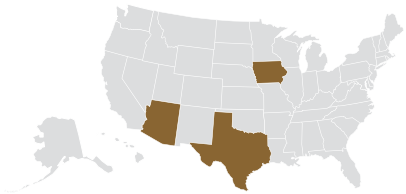
- ✓ **2QFY09** Milestone A
- ✓ **3QFY09** Competitive contracts awarded (three)
- ✓ **4QFY11** Prototyping phase
- ✓ **1QFY10** Field evaluations (three)
- ✓ **1QFY10** Critical design reviews (three)
- ✓ **3Q–4QFY10** Developmental testing
- ✓ **4QFY10–1QFY11** Limited User Tests (three)

PROJECTED ACTIVITIES

- + **2QFY12** Low Rate Initial Production Contract Award
- + **2QFY12–4QFY13** Low Rate Initial Production

CONTRACTORS

General Dynamics (Scottsdale, AZ)
Raytheon (Plano, TX)
Rockwell Collins (Cedar Rapids, IA)



Chest Mount

End User Device

JTRS Radio

Tactical Communication and Protective System (TCAPS)

MISSION

Provides Soldiers with an improved environmental enabled communication capability that interfaces with current Army radios.

The **Tactical Communication and Protective System (TCAPS)** allows Soldiers to hear sounds at enhanced levels with better clarity while reducing or removing exposure to hazardous impulse noise and blast overpressure.

TCAPS is compatible with existing Organizational Clothing and Individual Equipment (OCIE) and radio equipment and supports all Military Occupational Specialties (MOSs) by providing enhanced capabilities and improvements that meet the Soldier's requirement for hearing protection.

PROGRAM STATUS

- ✓ **1QFY11** TCAPS CPD Approved
- ✓ **2QFY11** TCAPS added to FY12 RFI list

PROJECTED ACTIVITIES

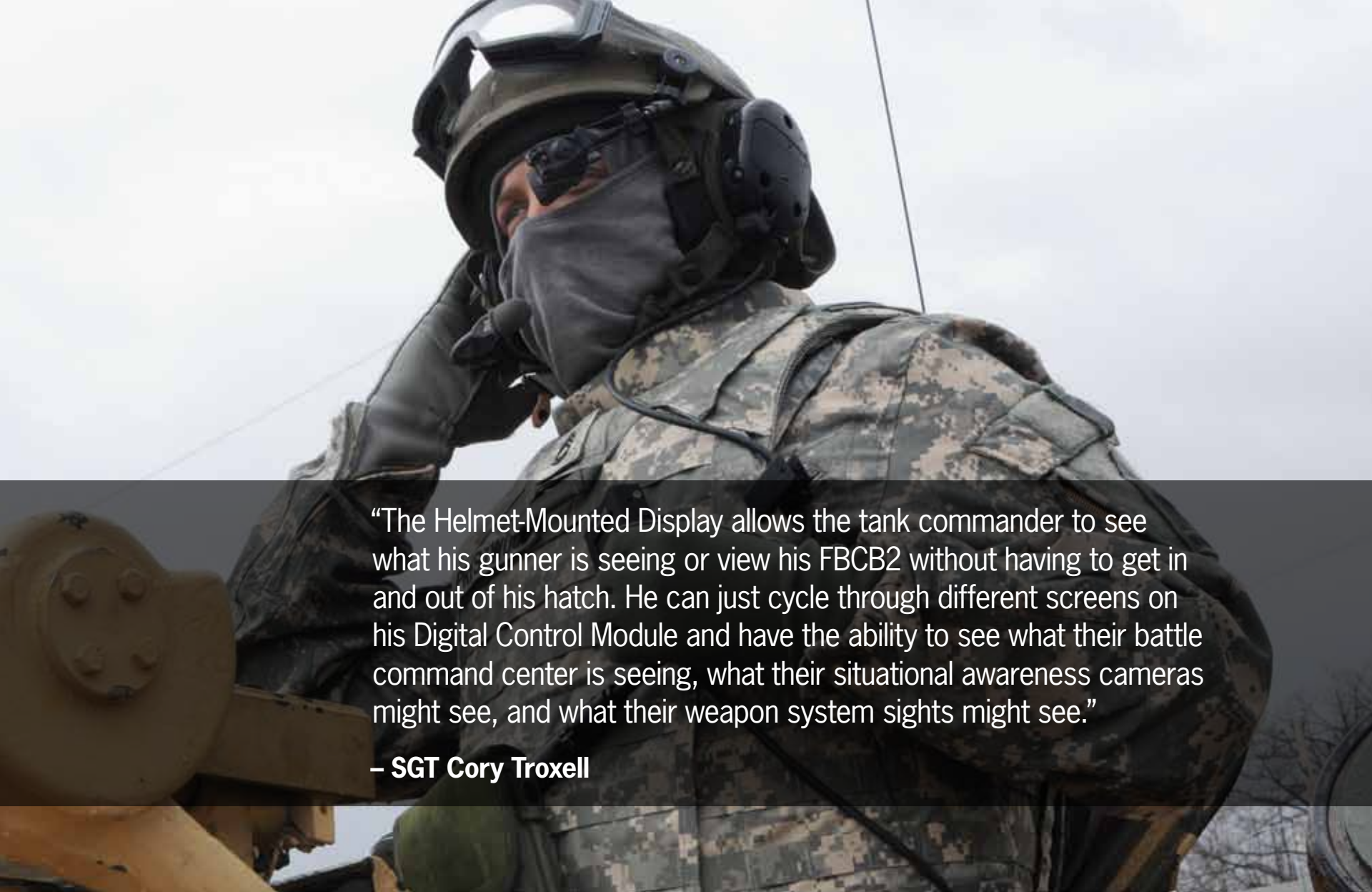
- \+ **3QFY13** Fielding scheduled to begin

CONTRACTORS

General Dynamics (Scottsdale, AZ)
Raytheon (Plano, TX)
Rockwell Collins (Cedar Rapids, IA)

Soldier Expeditionary Power

Soldier Power encompasses power generation at one kilowatt and below, power scavenging, power distribution, power management, and power storage solutions that are light weight, Soldier portable/ wearable and capable of operating in the most austere environments.



"The Helmet-Mounted Display allows the tank commander to see what his gunner is seeing or view his FBCB2 without having to get in and out of his hatch. He can just cycle through different screens on his Digital Control Module and have the ability to see what their battle command center is seeing, what their situational awareness cameras might see, and what their weapon system sights might see."

– SGT Cory Troxell

PRODUCT MANAGER MOUNTED SOLDIER SYSTEM (PM MSS)

PM MSS integrates capabilities that improve combat effectiveness for mounted Soldiers. MSS extends platform capabilities to vehicle crew members including commanders, drivers, and gunners.

The MSS team conducts capability integration, principally along Soldier and platform lines. Three major hardware subsystems (Microclimate Cooling, Cordless Communications, and Helmet-Mounted Display) are being integrated into Heavy Brigade Combat Team and Stryker Brigade Combat Team platforms to extend capability to the mounted crewman. MSS integrates these capabilities with more than 20 individual protective and clothing components that enable the Soldier to safely perform his crew and mission functions, both inside and outside of his platform.

Mounted Soldier System (MSS) enhances the Soldier/platform fusion required for optimal mission performance over a broad spectrum of operations. MSS links the sensory, situational awareness, and force protection capabilities of the platform to the Soldier, while simultaneously linking the detectory, processing, and cognitive capabilities of the Soldier to the platform to form an integrated, synergistic, combat-effective system.

Mounted Soldier System (MSS)

MISSION

Enhances the survivability, situational awareness, lethality, mobility, and sustainability of all combat vehicle crewmen and other Soldiers performing mounted operations.

The **Mounted Soldier System (MSS)** is an evolutionary program with identified increments. Increment I provided the Mounted Warrior Helmet-Mounted Display, and Increment II will augment current capabilities under the MSS program. MSS will provide the combat vehicle crew members increased capabilities to conduct offensive and defensive operations.

The MSS consists of a Heads-up Display, Cordless Communications, Microclimate Cooling, and force protection items. These subsystems will provide platform commanders and vehicle crew members increased effectiveness on the network-centric battlefield in areas of command and control, situational awareness, communications, and force protection. MSS also provides improved integration and systems engineering to enhance capability synergy and allow crewmen to better perform their functions in the confined spaces of combat vehicles.

Helmet-Mounted Display Capabilities:
The Helmet-Mounted Display subsystem shows situational awareness information and sensors by controlling video signals coming from various vehicle sources. The integration supports up to four crewmen per platform and up to five video signals.

Cordless Communications Capabilities:
The Cordless Communications Capabilities system provides increased safety and mission performance to the platform's crew with the addition of a wireless connection capability to the vehicle's intercom and radios. It allows the crew to communicate by voice over the platform's intercom system when mounted or dismounted within 300 meters of their platform. The system automatically detects when a crewman becomes disconnected from the intercom system and allows the disconnected crewman to continue to have voice communication with the crew.

Microclimate Cooling System:
The Microclimate Cooling System is integrated into the platform and features a cooling vest worn by the Soldier. It reduces crewman heat stress and provides increased comfort during operations in hot environments.

Soldier Force Protection System Capabilities:
Soldier safety is enhanced with the Improved Combat Vehicle Crewman Coverall, Fire Resistant Army Combat Uniform (FR ACU), Fire Resistant Environmental Ensemble (FREE), flame-resistant and moisture-wicking undergarments, ballistic and laser eye protection, flame-resistant hand, face, and foot protection, and the maxillofacial shield. Soldier effectiveness is improved with the ambidextrous individual weapon holster, an integrated CVC Helmet system, and a lighter-weight, multi layer, improved body armor system.

PROGRAM STATUS

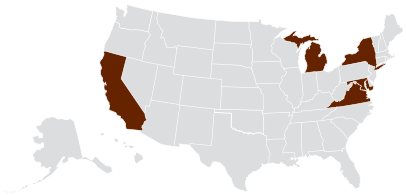
- ✓ **3QFY07–3QFY08** Mounted Warrior deployed with 4th Battalion, 9th Infantry Regiment in Operation Iraqi Freedom
- ✓ **1QFY08** Milestone B for MSS
- ✓ **2QFY09** MSS contracts awarded
- ✓ **2QFY11** DT Complete on M1A2 SEP, M2A3, M3A3 and Stryker ICV
- ✓ **3QFY11** LUT Complete

PROJECTED ACTIVITIES

- + **FY12** Low Rate Initial Production (LRIP)
- + **FY12** Transition program to PEO Ground Combat Systems

CONTRACTORS

Rockwell Collins (Carlsbad, CA)
Carleton Technologies Inc. (Orchard Park, NY)
Thales (Clarksburg, MD)
General Dynamics Land Systems (Sterling Heights, MI)
BAE Systems (Santa Clara, CA)
Booz Allen Hamilton (Springfield, VA)



Helmet-Mounted Display System

Microclimate Cooling System

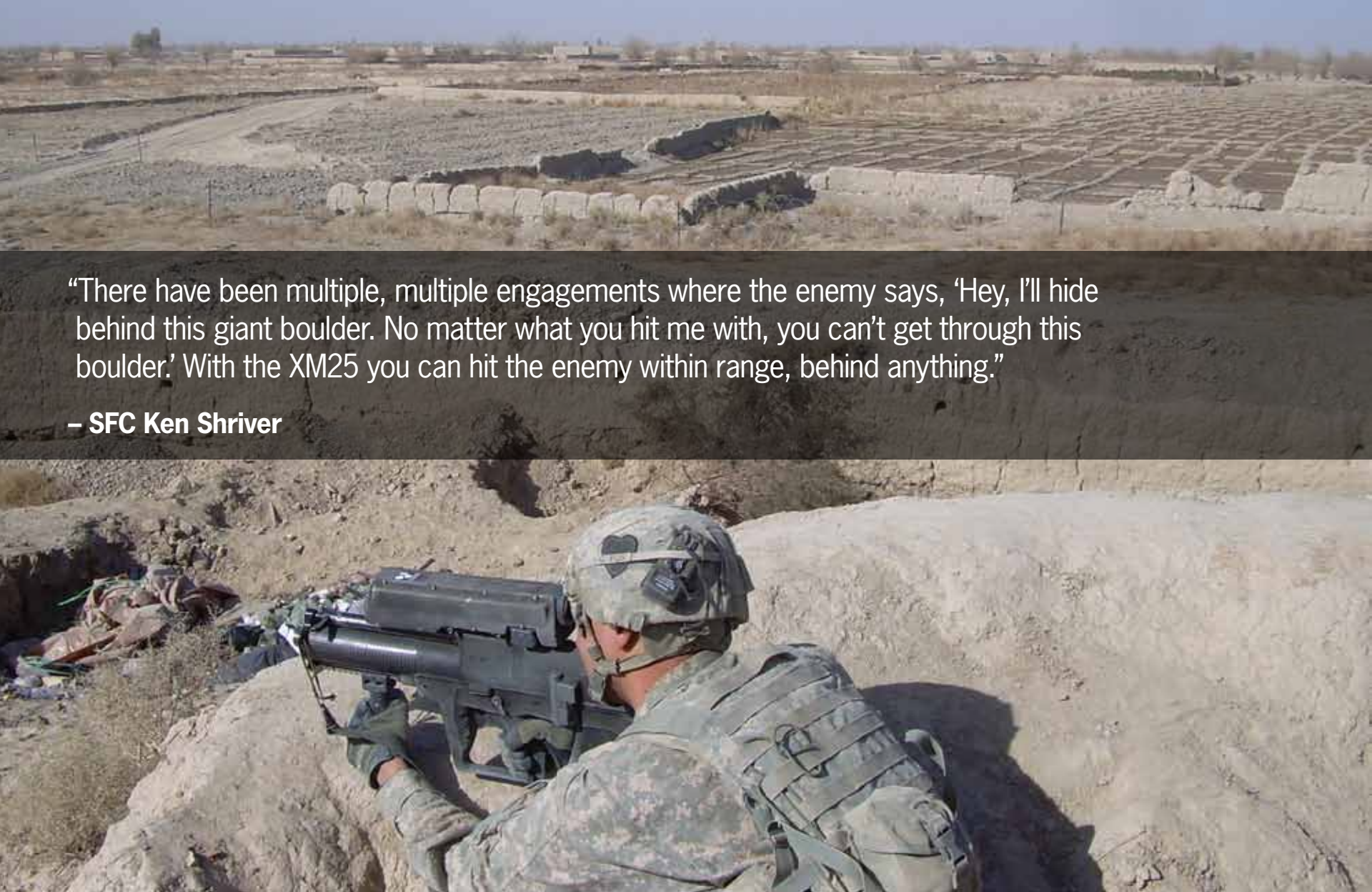
Cordless Communications System

Project Manager Soldier Weapons (PM SW)

Product Manager Individual Weapons

Product Manager Crew Served Weapons

PM SW ensures that Soldiers on the battlefield have overmatch capabilities in individual and crew served weapons. PM SW supports Soldiers through the development, production, fielding, and sustainment of current and future weapons systems, as well as associated target acquisition/fire control products. As a result of PM SW's efforts, Soldiers benefit from continuous improvement programs and are equipped with systems that enhance both survivability and lethality. Two product managers under PM SW drive the mission to provide Soldiers battlefield superiority: Product Manager Individual Weapons and Product Manager Crew Served Weapons.



"There have been multiple, multiple engagements where the enemy says, 'Hey, I'll hide behind this giant boulder. No matter what you hit me with, you can't get through this boulder.' With the XM25 you can hit the enemy within range, behind anything."

– SFC Ken Shriver

PRODUCT MANAGER INDIVIDUAL WEAPONS (PM IW)

PM IW is responsible for current and future rifles, carbines, pistols, shotguns, grenade launchers, sniper systems, airburst weapons, and related target acquisition/fire control products.

The **XM25 Individual Semi-Automatic Airburst System (ISAAS)** will provide the infantry Soldier with leap-ahead overmatch capability and range with a family of 25mm programmable airburst munitions.

The **XM2010 Enhanced Sniper Rifle (ESR)** will provide the Soldier greater range against personnel targets over existing 7.62 x 51mm sniper weapons.

XM25, Individual Semi-Automatic Airburst System (ISAAS)

MISSION

Provides the Soldier with a "smart" revolutionary weapon system that breaks the current small arms direct fire parity and dramatically increases our forces' lethality and range with a family of 25mm programmable ammunition.

The **XM25 Individual Semi-Automatic Airburst System (ISAAS)** enables the small unit and individual Soldier to engage defilade targets by providing a 25mm air bursting capability that can be used in all operational environments. The ISAAS is an individually fired, semi-automatic, man-portable weapon system. An individual Soldier employing basic rifle marksmanship skills can effectively engage exposed or defilade targets in just seconds out to 700 meters.

The system allows the individual Soldier to quickly and accurately engage targets by producing an adjusted aimpoint based on range, environmental factors, and user inputs. The target acquisition/fire control integrates thermal capability with direct-view optics, laser rangefinder, compass, fuze setter, ballistic computer, and an internal display.

The ISAAS reduces the reliance of small units on non-organic assets (mortars, artillery, and air support) and the need to compete for priority of fires when time is critical. In addition to air bursting ammunition, a family of ammunition is being developed to support other missions, which could include armor-piercing and nonlethal scenarios.

Caliber: 25mm
Weight: 12-12.5 pounds
Length: 29.5 inches

PROGRAM STATUS

- **1QFY11** Milestone B decision
- **1QFY11–4QFY11** prototype units engaged in OEF Forward Operational Assessments (FOA)
- **2QFY11** Engineering & Manufacturing Development (EMD) contract awarded
- **2QFY11** Capabilities Development Document approved
- **3QFY11** Integrated Baseline Review
- **3QFY11** System Requirements Review

PROJECTED ACTIVITIES

- **1QFY12** FOA continuation
- **2QFY11-2QFY14** Conduct EMD phase
- **1QFY13** Conduct Government Development Testing
- **4QFY13** Milestone C decision

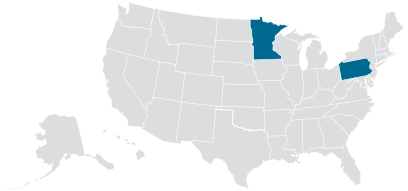
CONTRACTORS

Prime
Alliant Techsystems (Plymouth, MN)

25mm Airburst Weapon
H&K Gmbh (Oberdorf, Germany)

Target Acquisition/Fire Control
L-3 Communications/Brashear (Pittsburgh, PA)

25mm Ammunition
Alliant Techsystems (Plymouth, MN)



25mm ammunition, currently in development

Armor-piercing

Training

High Explosive Air Bursting

25mm ammunition, future development

Less-than-lethal (Blunt)

Less-than-lethal (Air Bursting)

Door-breaching

M4/M4A1 Carbine

MISSION

Increases the lethality and operational flexibility of the Soldier with a carbine-length version of the M16 rifle.

The **M4 Carbine** series is designed for lightness, speed, mobility and firepower and is standard issue for brigade combat teams in theater. The system is one pound lighter and more portable than the M16 series of rifles. The M4 series of carbines can also be mounted with the M203A2 Grenade Launcher, M320A1 Grenade Launcher, or M26 Modular Accessory Shotgun System. The weapon incorporates more than 60 refinements since its inception. In post-combat surveys, 94 percent of Soldiers rate the M4 as an effective weapons system.

In September 2010, Headquarters Department of the Army G3/5/7 authorized the M4A1 as the standard carbine for the U.S. Army. Compared to the M4, the M4A1 has a heavier barrel and is fully automatic, improvements that deliver greater sustained rates of fire. The Army intends to upgrade both the M4 and M4A1 configurations with an ambidextrous fire control assembly. SOCOM has been using the M4A1 configuration since 1994.

The **M4 Adapter Rail System (ARS)** replaces the hand guards, allowing a Soldier with M4/M4A1 Carbines additional MIL-STD-1913 rails to attach mission-specific accessories to enhance lethality and Soldier effectiveness. Accessories such as the laser rangefinder, infrared illuminator/pointer, and thermal sights can be added or removed as the mission dictates without the use of special tools.

Caliber: 5.56mm
Weight with empty magazine, no sling or optic: M4 6.75 pounds; M4A1 7.13 pounds
Overall length: 30.57 inches (retracted), 33.82 inches (extended)
Barrel length: 14.5 inches
Range: 500 meters point target

PROGRAM STATUS

M4

✔ Delivery and fielding complete (Army)

M4A1

✔ Deliveries ongoing

PROJECTED ACTIVITIES

M4

+ In sustainment

M4A1

+ New competitive M4A1 solicitation pending for 24,000 systems
+ Continue M4A1 production, deliveries, and fielding

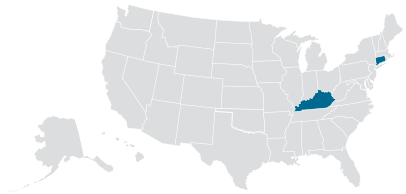
CONTRACTORS

M4 Carbine

Colt's Manufacturing Co. (Hartford, CT)

M4 Adapter Rail System

P & S Products Inc. (Lexington, KY)



BURROWS

M16A2/A4 Rifle

MISSION

Increases the Soldier's lethality and operational flexibility through improvements to the M16A2.

The **M16A2/A4 Series 5.56mm Rifle** is the most prevalent combat rifle in the U.S. Army inventory. It is a gas-operated, air-cooled, shoulder-fired weapon that can be fired either in automatic three-round bursts or semi-automatic single shots.

The M16A2 has an integral rear sight while the M16A4 includes a MIL-STD-1913 upper receiver and an **M5 Adapter Rail System (ARS)** with a Back-up Iron Sight. Both systems can accommodate modern optics and accessories, as well as configurations that incorporate M203 and M320 40mm grenade launchers. These accessories can be added or deleted as the mission dictates, without the use of special tools.

Caliber: 5.56mm
Weight with empty magazine, no sling or optic: 8.13 pounds
Overall length: 39.6 inches
Barrel length: 20 inches
Range: 550 meters point target

PROGRAM STATUS

- ✔ Production of the M16A2 and M16A4 is complete

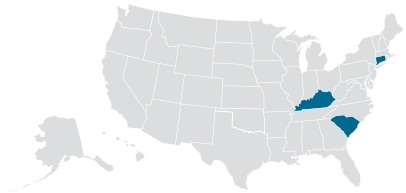
PROJECTED ACTIVITIES

- \+ In sustainment

CONTRACTORS

M16A2/A4 Rifle
Fabrique National Manufacturing LLC (Columbia, SC)
Colt Defense (Hartford, CT)

M5 ARS
P & S Products Inc. (Lexington, KY)



M320 Grenade Launcher (GL)

MISSION

Enables the Soldier to accurately engage the enemy in daylight or total darkness with a safer, more reliable grenade launcher that reduces aiming error and increases first-round hit probability.

The **M320 Grenade Launcher (GL)** is the replacement to all M203 series of grenade launchers on M16 Rifles and M4 Carbines. A modular system, it attaches under the barrel of the rifle or carbine and can convert to a stand-alone weapon. The M320 has an available day/night sighting system and improved safety features. It also has a side-loading unrestricted breech that allows the system to fire longer 40mm low-velocity projectiles (NATO standard and non-standard).

The platform's available sighting system allows Soldiers to accurately target in daytime or nighttime, while reducing aiming error and increasing first-round hit probability. Located on the side of the launcher, the sighting system design lessens interference with rifle and carbine sights, reduces attaching operations to one action, and eliminates the need to re-zero after reattaching to a weapon. The system also comes with an integrated leaf sight.

The M320 is more reliable and safer because it uses a more modern double-action trigger/firing system. If the weapon misfires, the operator can pull the trigger again, compared with the M203, which requires cycling of the breech to re-cock the firing pin and pulling the trigger again.

The new pistol grip design eliminates the need to use the magazine as a hand grip. The latest in lightweight material composites are used to improve durability.

Caliber: 40mm
Weight: 6.7 pounds (stand-alone); 5.13 pounds (attached mode on M4); 5.36 pounds (attached mode on M16)
Length: 11 inches (stand-alone); 8 inches (barrel)
Range: 350 meters

PROGRAM STATUS

- ✔ Production and fielding

PROJECTED ACTIVITIES

- + **3QFY12** Competitive solicitation planned to select improved day/night sighting system
- + **4QFY12** Competitive solicitation planned to provide additional M320A1 GLs

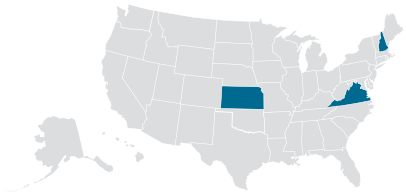
M320 Stand-Alone System

M320 Mounted Underneath M4

CONTRACTORS

Prime
Heckler & Koch Defense (Ashburn, VA)

Subcontractor
Insight Technology Inc. (Londonderry, NH)
Bushnell Inc. (Overland Park, KS)



M203A2 Grenade Launcher

MISSION

Increases the lethality and operational flexibility of the Soldier with a grenade capability that bridges the gap between hand grenade and mortar.

The **M203A2 Grenade Launcher** is the latest modification to the M203 40mm Grenade Launcher. It provides a mounting system compatible with the M16A4 Rifle and M4 Carbine. The modification includes a quick-attach bracket for the grenade launcher and a leaf sight to attach to the Adapter Rail System.

The **M203 Day-Night Sight (DNS)** provides an available aiming device for the M203 Grenade Launcher for all lighting conditions, increasing the lethality and operational flexibility of the Soldier. The DNS provides increased accuracy over the current quadrant and leaf sight systems for both point and area targets. The DNS is equipped with integral iron sights in case of electronics failure or for situational expediency.

Caliber: 40mm
Weight: 3 pounds
Length: 12 inches
Effective range: 350 meters

PROGRAM STATUS

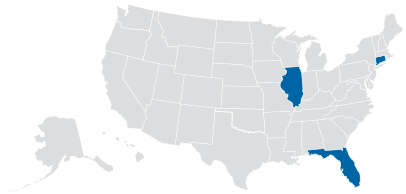
- ✔ Production complete for Army authorization

PROJECTED ACTIVITIES

- + In sustainment
- + M203 and M203A1 grenade launchers are being converted by modification work order (MWO) on an as-needed basis

CONTRACTORS

M203A2 Grenade Launcher
Airtronic Services Inc. (Elk Grove Village, IL)
Colt Defense (New Haven, CT)
Knight's Armament Co. (Titusville, FL)



SMITH

M26 12-Gauge Modular Accessory Shotgun System (MASS)

MISSION

Enhances Soldier effectiveness with lethal, less-than-lethal, and door-breaching capabilities with a 12-gauge accessory shotgun attachment that provides faster transition time between the primary weapon and shotgun.

The lightweight **M26 12-Gauge Modular Accessory Shotgun System (MASS)** attaches to the M4 Carbine and zeroes to the host weapon. It is also designed to operate as a stand-alone system, and comes with a recoil-absorbing, collapsible buttstock. With a Picatinny rail on top, the receiver can be used to mount sighting equipment. The bolt handle (charging handle) is mountable on either side for ambidextrous handling.

The MASS enables Soldiers to transition more quickly between lethal and less-than-lethal fires and adds shotgun capability to their M4 without carrying a separate second weapon. Additional features include a box magazine, flip-up sights, and an extendable stand-off device for door breaching.

Caliber: 12 Gauge

Weight: 3.5 pounds (attached mode); 5.5 pounds (stand-alone)

Length: 16.5 inches (attached mode); 25 inches (stand-alone)

Effective Range: 25 meters

PROGRAM STATUS

- ✓ **4QFY09** Limited user test and evaluation with Military Police units
- ✓ **2QFY10** Low-rate initial production approved
- ✓ **4QFY10** First article testing completed

PROJECTED ACTIVITIES

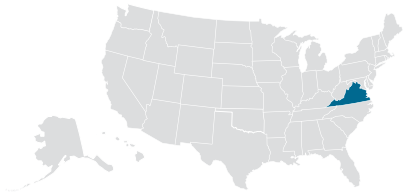
- \+ **4QFY10–4QFY11** Ramp up to full-rate production
- \+ **1QFY12** Materiel Release
- \+ **2QFY12** First unit equipped

M26 Stand-Alone System

M26 Mounted Underneath M4

CONTRACTORS

Vertu Corp. (Warrenton, VA)



M500 Shotgun

MISSION

Increases the Soldier's capability for door breaching and crowd control.

The **M500 Shotgun** provides short-range lethal, less-than-lethal crowd control, and door-breaching capabilities with appropriate ammunition types. The shotgun is carried in addition to selected Soldiers' primary weapon and is commonly issued to military police, infantry, engineers, and armorers.

The M500 Shotgun is a manually (slide) operated repeating shotgun chambered in 12 gauge, with an integral 5-round tubular magazine.

Caliber: 12 Gauge
Weight: 7.7 pounds
Length: 39.5 inches
Effective range: Ammunition dependent

PROGRAM STATUS

✔ Production complete

PROJECTED ACTIVITIES

+ In sustainment

CONTRACTORS

O.F. Mossberg & Sons Inc. (North Haven, CT)

M107 Semi-Automatic Long Range Sniper Rifle (LRSR)

MISSION

Enables sniper teams to employ greater destructive force against light materiel and personnel targets at longer ranges.

The **M107 Semi-Automatic Long Range Sniper Rifle (LRSR)** fires .50 caliber ammunition and is capable of delivering precise, rapid fire on targets out to 2,000 meters, greatly exceeding the terminal effect capability of the XM2010, M110 or M24 sniper rifles. It is especially valuable during military operations in urban terrain where greater firepower and standoff ranges provide counter-sniper capability while enhancing sniper survivability.

The rifle is a commercial off-the-shelf weapon that incorporates a dual-chamber detachable muzzle brake, dual barrel springs, and long mainspring design to reduce weapon recoil. It leverages a variable power day optic sight and a 10-round detachable box magazine. It weighs 35 pounds (combat ready) and includes folding front and rear sights, fluted match-grade barrel, detachable carrying handle, rubber recoil pad, rear grips, and a MIL-STD 1913 rail. The Mk211-Mod0 (A606), Caliber .50, Multipurpose Cartridge is the preferred tactical ammunition against anti-materiel targets. It is employed by all U.S. military services as well as 60 additional armies around the world.

Accessories include hard and soft cases, detachable folding bipod, detachable sling, extra 10-round magazines, cleaning/maintenance equipment, and manuals.

Caliber: .50 caliber Browning Machine Gun (BMG)
Weight: 35 pounds (combat ready)
Overall length: 57 inches
Barrel length: 29 inches
Range: 2,000 meters

PROGRAM STATUS

- ✔ In sustainment
- ✔ Residual Explosive Ordnance Disposal unit fieldings still outstanding
- ✔ Residual maintenance work order/upgrade remaining

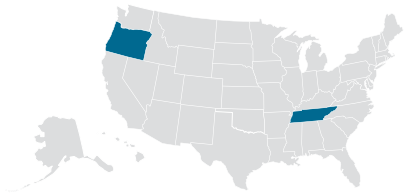
PROJECTED ACTIVITIES

- \+ Product improvements including weight reduction, signature suppressor, and protective coatings

CONTRACTORS

Barrett Firearms Manufacturing (Murfreesboro, TN)

Leupold & Stevens Inc. (Beaverton, OR)



ROBERTS

XM2010 Enhanced Sniper Rifle (ESR)

MISSION

Enables sniper teams to engage enemy personnel with an M24 Sniper Weapon System converted to fire .300 Winchester Magnum (WinMag) ammunition for greater precision and a 50 percent increase in effective range beyond current Army 7.62mm sniper rifles.

The **XM2010** is a bolt action, magazine-fed, air-cooled, shoulder-fired weapon system which utilizes Mk248-Mod0 (A191) .300 WinMag ammunition. The rifle is a man-portable, direct line of sight weapon system capable of providing precision fire on targets out to 1,200 meters using match grade ammunition. The XM2010 is equipped with a fully adjustable right-folding chassis system featuring a monolithic MIL-STD 1913 optic mounting rail, user-positionable MIL-STD 1913 accessory rails, and accessory cable routing channels. The shooter interface can be tailored to accommodate a wide range of shooter preferences and its folding stock provides Soldier flexibility in transporting the weapon during operations.

The rifle is also supplied with five (5) six-round detachable box magazines, a Leupold 6-20x50mm variable power Day Optic Scope with advanced scalable H-58 ranging and targeting reticle, sound suppressor, adjustable bipod, sling, a rifle transport/storage case, drag bag, operator's manual, deployment kit and cleaning kit. Associated support equipment includes the AN/PVS-29 Clip-On Sniper Night Sight. The ESR is a non-developmental item.

The weapon also incorporates advanced corrosion resistant coatings to ensure longevity. The aluminum, steel, and high impact polymers used in the weapon's construction are lightweight and rugged.

Caliber: .300 WinMag
Weight: 18.7 pounds (combat ready with suppressor)
Length: 52 inches extended buttstock with suppressor
Barrel length: 24 inches
Range: 1,200 meters

PROGRAM STATUS

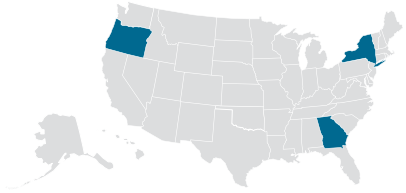
- ✔ Converted 250 weapons in accordance with HQDA Directed Requirement (11JUN10)
- ✔ Urgent Materiel Release fieldings ongoing in support of OEF deployers
- ✔ In sustainment

PROJECTED ACTIVITIES

- \+ Efforts underway to pursue conversion of all M24 SWSs as a program of record and pure fleet fieldings across entire Army

CONTRACTORS

Remington Arms Co. Inc. (Ilion, NY)
Leupold & Stevens Inc. (Beaverton, OR)
Advanced Armaments Co. (Lawrenceville, GA)



M110 7.62mm Semi-Automatic Sniper System (SASS)

MISSION

Supplements the sniper's role to support combat operations with greater firepower, greater versatility, and more focused target engagements to improve sniper survivability.

The **M110 7.62mm Semi-Automatic Sniper System (SASS)** is an anti-personnel and light materiel weapon that fires 7.62mm ammunition out to a maximum effective range of 800 meters. It is also the first U.S. Army weapon system that integrates a quick attach/detach suppressor to reduce the weapon's firing signature. The weapon system exceeds the rate of fire and lethality of the M24 Sniper Weapon System, the previous medium-caliber sniper rifle.

The M110's Leupold Mark IV 3.5–10x scope provides both a wide field of view at low magnification for close-in engagements and a narrow field of view for precision long shots at high magnification. The SASS leverages a rapid fire/rapid reload design, variable-power day optic sight, and 10- or 20-round detachable magazines. The M110 includes a detachable folding bipod, and a MIL-STD 1913 rail. Accessories include hard and soft cases, cleaning/maintenance equipment, manuals, and the **M151 Enhanced Spotting Scope**.

Caliber: 7.62mm
Weight: 15.3 pounds (combat ready); 17.3 pounds (combat ready with suppressor)
Length: (buttstock fully compressed)
40.5 inches (without suppressor)
46.5 inches (with suppressor)
Effective range: 800 meter point targets

PROGRAM STATUS

- Production and fielding ongoing
- In sustainment

PROJECTED ACTIVITIES

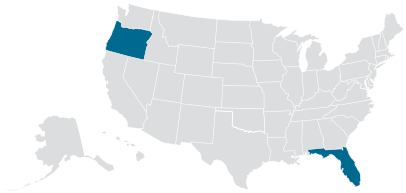
+ **1QFY12** Anticipated release of request for proposal for the M110E1 Compact Product Improvement Program

M151 Improved Spotting Scope

CONTRACTORS

Knight's Armament Co. (Titusville, FL)

Leupold & Stevens Inc. (Beaverton, OR)



M24 Sniper Weapon System (SWS)

MISSION

Enables sniper teams to engage enemy personnel with a 7.62mm bolt-action rifle using precision fire at extended ranges.

The **M24 Sniper Weapon System (SWS)** is a 7.62mm bolt-action, six-shot rifle that is chambered for 7.62 x 51mm M118 long-range ammunition. Components include a day optic sight with 10-x magnification and adjustable focus, metallic iron sights, deployment kit, cleaning kit (rifle and optic), soft rifle carrying case, optic and system cases, operator's manual, and an optional bipod.

Associated support equipment includes the AN/PVS-10 Sniper Night Sight and an improved spotting scope. The SWS is a non-developmental item.

Caliber: 7.62mm
Weight: 12.1 pounds (with sling); 14.25 pounds (with sling, day optic and full magazine)
Length: 40.75 inches
Barrel length: 24 inches
Range: 800 meters

PROGRAM STATUS

- ✔ Fielding complete
- ✔ In sustainment

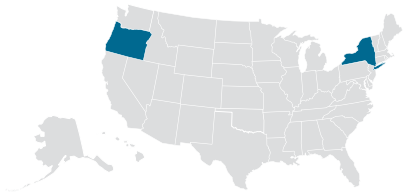
PROJECTED ACTIVITIES

- + Limited quantity of M24 Sniper Weapon Systems will be converted to XM2010s that accept .300 Winchester Magnum ammunition

CONTRACTORS

Remington Arms Co. Inc. (Ilion, NY)

Leupold & Stevens Inc. (Beaverton, OR)



M151 Improved Spotting Scope

MISSION

Designed for use by a sniper team, the M151 Improved Spotting Scope allows recognition and identification of targets at long distances.

The **M151 Improved Spotting Scope** allows recognition and identification of targets at long distances. A light and compact scope with powerful and bright optics, the M151 has 12-40x magnification with a 60mm objective lens diameter. The scope has a Leupold Mil Dot (round dot) reticle for both range estimation and tactical collaboration with the shooter. The scope is weatherproof and fog-proof.

The **M151's Tactical Tripod Kit** allows spotters to employ the sight from the prone to sitting positions. Constructed of high-strength lightweight aluminum alloys, the tactical tripod deploys quietly and provides rock solid stability necessary for sniper reconnaissance, target interdiction, observation and surveillance missions.

A laser filter unit is provided to protect the observer from magnified eye hazards on the battlefield as well as an anti-reflection device to virtually eliminate detection from returned glint off the scope's objective lens.

The M151 is also fielded with a universal Monoloc® adapter that allows an AN/PVS-14 Monocular Night Vision Device to be attached to the spotting scope's eyepiece thereby providing a night-time capability.

Length: 12.4 inches
Weight: 2.31 pounds
Magnification: 12-40X
Lens Diameter: 60mm

PROGRAM STATUS

✔ Delivery and fielding complete

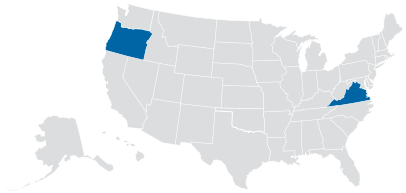
PROJECTED ACTIVITIES

\+ Sustainment and deliveries ongoing

CONTRACTORS

M151 Enhanced Spotting Scope
Leupold & Stevens Inc. (Beaverton, OR)

M151 Tactical Tripod Kit
Ashbury International Group Inc. (Charlottesville, VA)



M14 7.62mm Enhanced Battle Rifle (EBR)

MISSION

Provides infantry squads with a squad designated marksman capability to engage enemy targets beyond the range of M4 Carbines and M16 Rifles.

The **M14 7.62mm Enhanced Battle Rifle (EBR)** is an air-cooled, gas-operated, magazine-fed, shoulder-fired weapon. It is a rack stock M14 rifle mated to an enhanced aluminum billet stock, Mark 4 tactical scope, and cantilever mount. With its new adjustable buttstock, cheek rest and M4-style pistol grip, the rifle is effective in close quarters combat and in the Squad Designated Marksman role. The EBR can be returned to its original configuration with no permanent modifications.

Five thousand M14 EBRs were reconfigured and assembled at TACOM Lifecycle Management Command (LCMC) at Rock Island Arsenal in response to Operational Need Statements requesting a longer range capability. An additional 1,200 systems are currently in the process of being assembled. The upgraded weapons are currently issued via loans and are in service with select Army units.

Caliber: 7.62mm
Weight: 14.9 pounds (empty); 16.6 pounds (with loaded magazine)
Barrel Length: 22 inches
Range: 800 meters

PROGRAM STATUS

- ✔ **3QFY09** Army Requirements and Resourcing Board approved 5,000 systems
- ✔ **1QFY10** 1,200 additional systems authorized
- ✔ **3QFY10** First 5,000 EBRs completed
- ✔ Sustainment

PROJECTED ACTIVITIES

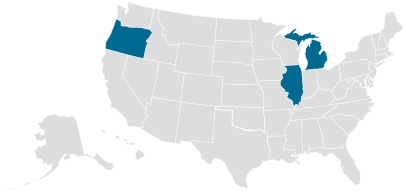
- \+ **4QFY11** Complete remaining 789 of additional 1,200 systems

CONTRACTORS

Army effort at TACOM Lifecycle Management Command (Rock Island, IL)

Sage International, LTD (Oscoda, MI)

Leupold & Stevens Inc. (Beaverton, OR)



M9 Pistol

MISSION

Enhances Soldier lethality, survivability, and situational awareness in close combat situations via an improved pistol with rail attachment capabilities.

The **M9 Pistol** is a semi-automatic, double-action pistol that is lighter and safer than its predecessors. The M9 is carried by crew served weapon crewmen and others who have a personal defense requirement, such as law enforcement personnel, unit leaders, and aviators. It replaces the M1911A1 .45 caliber pistol and the .38 caliber revolver.

The **M9 Pistol Rail System** allows attachment of an Integrated Laser White Light Pointer (ILWLP) to the M9 Pistol, providing a tactical advantage in close combat operations. The ILWLP has resulted in increased lethality and survivability for Special Forces Soldiers and military police.

Caliber: 9mm
Weight: 40.9 ounces with loaded 15-round magazine; 33.9 ounces with empty magazine
Length: 8.5 inches

PROGRAM STATUS

M9

- ✔ Fielding in accordance with the increased Army Acquisition Objective

Pistol Rail

- ✔ **4QFY11** Fielding complete as part of the ILWLP program

PROJECTED ACTIVITIES

M9

- \+ Sustainment

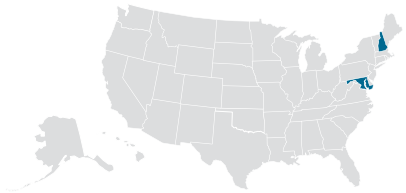
Pistol Rail

- \+ Sustainment

CONTRACTORS

Pistol
Beretta U.S.A. Corp. (Accokeek, MD)

Pistol Rail
Insight Technology Inc. (Londonderry, NH)



M16/M4 Magazine

MISSION

Provides Soldiers with reliable, quick-change, 30-round capacity ammunition feed equipment for M16 Rifles, M4 Carbines, and M249 Squad Automatic Weapons (SAWs).

The **M16/M4 Magazine** feeds ammunition to the M16, M4, and M249. The magazines are durable and may be reloaded repeatedly throughout their life cycle.

An improved version of this magazine was introduced in late 2009. It provides improved reliability by incorporating a revised spring and follower design. It is readily identifiable by the tan color of the follower. Seven improved magazines are being free-issued for every Army M4 Carbine and M16 Rifle.

Weight empty: 4 ounces
Weight loaded: 1.06 pounds
Capacity: 30 rounds

PROGRAM STATUS

- ✔ **4QFY09** Initial fielding of improved magazines
- ✔ Ongoing production

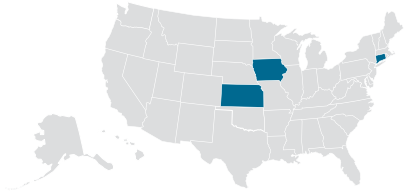
PROJECTED ACTIVITIES

- \+ Continued production and fielding

Improved M16/M4 Magazines are identifiable with the tan follower compared to the green or black followers of older magazines.

CONTRACTORS

Okay Industries Inc. (New Britain, CT)
Center Industries Corp. (Wichita, KS)
Brownells Inc. (Montezuma, IA)



M68 Close Combat Optic (CCO)

MISSION

Provides the Soldier armed with an M16 Rifle or M4 Carbine with a robust precision electronic optical red dot sight for use with both eyes open to improve Soldier effectiveness.

The **M68 Close Combat Optic (CCO)** is a red dot aiming device that enhances target acquisition speed, allowing Soldiers to engage targets up to 300 meters with both eyes open to maintain situational awareness. The sight has no magnification and can be used with all current night vision enhancements.

Improvements to the sight protect the inner tube and prevent damage in the field. A new LED improves battery life up to 30 times and increases the number of brightness positions. The redesigned battery compartment accommodates standard AA batteries and minimizes the risk of electronic failure.

Additional optics information is available online for individuals with Army Knowledge Online access. PM Soldier Weapons has a website that features operating instructions, training information, repair procedures, contact information and more. Visit: http://optics.army.mil.

Weight: 14.4 ounces (M16A4/M4 configuration); 14.1 ounces (M16A2 configuration with auxiliary mounting rail)
Length: 5.3 inches
Magnification: none

PROGRAM STATUS

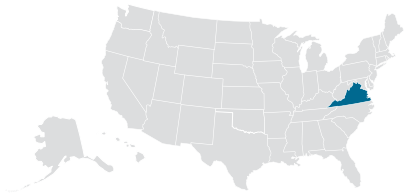
- ✓ **4QFY09** Started full-rate production and continued fielding

PROJECTED ACTIVITIES

- \+ Production and fielding

CONTRACTORS

Aimpoint Inc. (Chantilly, VA)



M150 Rifle Combat Optic (RCO)

MISSION

Provides optical enhancements that increase the probability of a first-round hit at distances of up to 800 meters.

The **M150 Rifle Combat Optic (RCO)** is a rugged, battery-free 4x magnified optic that provides full mission profile optical capability for use on M4/M16/ M249 weapon systems. Enhanced capabilities provided by the M150 RCO include range estimation, which, along with the bullet drop compensated reticle, provides accurate target engagements out to 800 meters for trained operators. The RCO provides greatly enhanced target identification over non-magnified views.

From reflexive fire in close quarter battle scenarios to long-range engagement and rapid transitioning in between, the M150 RCO provides trained operators with an increased first-round hit probability.

OPTICS WEB SITE

Additional optics information is available online for individuals with Army Knowledge Online access. PM Soldier Weapons has a website that features operating instructions, training information, repair procedures, contact information and more. Visit: http://optics.army.mil.

Weight: 16.2 ounces
Length: 7.3 inches
Magnification: 4x

PROGRAM STATUS

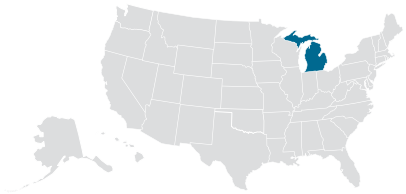
✔ **4QFY08** Full materiel release

PROJECTED ACTIVITIES

\+ Production and fielding

CONTRACTORS

Trijicon (Wixom, MI)



Close Quarters Battle Kit (CQB Kit)

MISSION

Provides accessories for the M4 Carbine and M16 Rifle that increase Soldier lethality and survivability.

The **Close Quarters Battle Kit (CQB Kit)** provides several low-cost, commercial off-the-shelf accessories for the M4 Carbine and M16 Rifle. The need for these items was identified by Soldiers during Operation Enduring Freedom, by the Joint Readiness Training Center Muddy Boots Council, by after-action reports, and by the Rapid Fielding Initiative.

The CQB Kit includes the following:

- Multi-magazine holder with storage pouch and dust cover
- Forward rail bracket
- Squad designated marksman bipod
- Forward grip/bipod
- Improved weapons cleaning kit
- Tactical sling
- Improved magazine

PROGRAM STATUS

- ✓ **2Q–3QFY08** Production contracts awarded
- ✓ **4QFY08** Full-rate production

PROJECTED ACTIVITIES

+ Items in sustainment: Multi-magazine holder, forward rail bracket, squad designated marks man bipod, forward grip/bipod, tactical sling
+ Continued production: Improved magazine, improved weapons cleaning kit

CONTRACTORS

Forward Rail Bracket
GG&G Inc. (Tucson, AZ)
Samson Manufacturing Inc. (Whately, MA)

Forward Grip/Bipod
Grip Pod Systems (Jacksonville, FL)

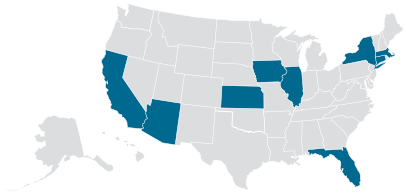
Improved Weapons Cleaning Kit
Otis Products Inc. (Lyons Falls, NY)

Multi Magazine Holder
Thor Defense Inc. (Downers Grove, IL)

Tactical Sling
Fire Force Tactical Gear Inc. (Arcadia, CA)

SDM Bipod
GG&G Inc. (Tucson, AZ)

Improved Magazine
Okay Industries Inc. (New Britain, CT)
Center Industries Corp. (Wichita, KS)
Brownells Inc. (Montezuma, IA)



Individual Weapons Future Initiatives

FUTURE ENHANCED SNIPER SYSTEMS

Several initiatives are planned to provide snipers more precision and greater lethality.

Precision Sniper Rifle

Requirements are currently being staffed for the Army's Precision Sniper Rifle (PSR) program, an extremely long-distance, highly accurate weapon system that nearly doubles the effective range of anti-personnel sniper engagements compared to today's 7.62mm systems. The PSR is intended to fill the gap between less accurate longer distance .50 caliber anti-materiel sniper rifles and the 800 meter range M110 and M24 weapon systems.

M107E1 Long Range Sniper Rifle Upgrade

The M107E1 effort is a product improvement program to acquire and field lighter-weight and suppressed M107 with enhanced protective exterior coatings to address shortcomings, user feedback and original operational requirements document pre-planned product improvements. The Maneuver Center of Excellence at Ft. Benning, Ga., issued a memo that outlined operationally focused capability enhancements and is seeking enhanced system performance, weight reduction, reduced firing signature (flash, dust and noise/blast), reduced recoil, and an enhanced day optic scope (DOS).

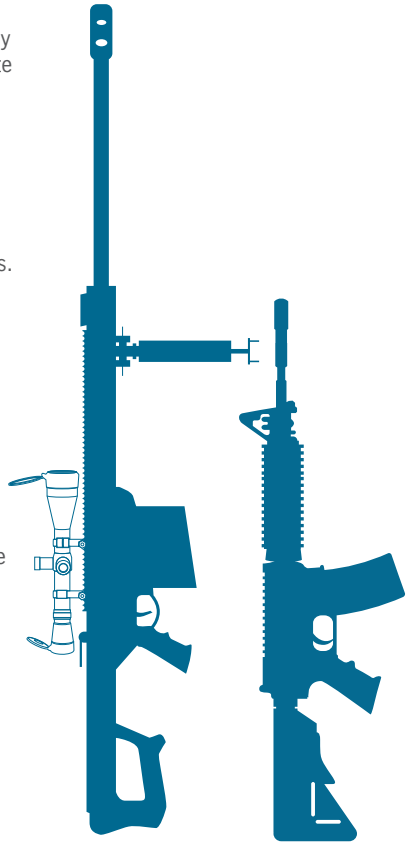
Improved Optics

Optics enhancements range from an improved stadia reticle for sniper scopes to integrating sophisticated laser rangefinders with electronic DOPE (Data On Previous Engagement) databases. For instance, one improvement will replace the outdated and calculation-intensive Mil-Dot range estimation reticles with a modern stadia reticle offering rapid estimation by fitting targets within graduated ranging overlays.

Fire Control Solutions

Fire control systems allow snipers to quickly and accurately acquire targets and calculate a near-instantaneous ballistic solution, allowing the sniper to place the system using an electronically displaced reticle on target and confidently send the round.

Two such systems include the Defense Advanced Research Projects Agency's (DARPA) "One Shot" and "EXACTO" systems. The One Shot program will provide snipers with a technically advanced spotting scope capable of calculating cumulative wind effects to target and providing an accurate, adjusted ballistic aimpoint to the shooter. The EXACTO program is focused on developing a spotting scope-based target acquisition and guidance system that would steer maneuverable .50 caliber sniper bullets directly to a target. These DARPA programs seek to push cutting-edge technologies to increase operational range and hit probability of sniper systems. Maturity of these technologies and transition to the field is scheduled to occur over the next several years.



THE DUAL PATH STRATEGY FOR THE NEXT GENERATION OF ARMY SERVICE RIFLES

Program Executive Office Soldier is currently pursuing a "dual path" strategy that consists of the continuous improvement program for the M4 Carbine, paired with a full and open carbine competition. The results of these efforts will provide Soldiers with enhanced battle rifles that are even more effective, reliable and accurate than the current fleet of 1.1 million M16/M4 weapon systems.

The intent of the dual path strategy is to allow the Army to continue its practice of upgrading the combat-proven M4 while simultaneously challenging industry to develop the next generation carbine. With nearly 500,000 M4s in the Army inventory, it is critical to strengthen the M4 platform while the Army invests the time necessary to properly develop, test and field a new weapon system.

M4 IMPROVEMENTS

The first path is the improvement plan for the M4, which is broken into three phases. In September 2010, Headquarters Department of the Army G3/5/7 authorized the M4A1 as the standard carbine for the U.S. Army. Compared to the M4, the M4A1 has a heavier barrel and is fully automatic, improvements that deliver greater sustained rates of fire. As part of Phase I then, PM Soldier Weapons converted its contract for all remaining M4s to be manufactured to M4A1 specifications. Subsequently, PM Soldier Weapons initiated a competition for an additional 24,000 M4A1 Carbines to complete its acquisition objective and issued solicitations for kits to convert fielded M4s into M4A1s with ambidextrous fire control assemblies.

Phase II improvements will compete and test forward rail assemblies, bolts and bolt carrier assemblies to increase accessory integration while enhancing durability.

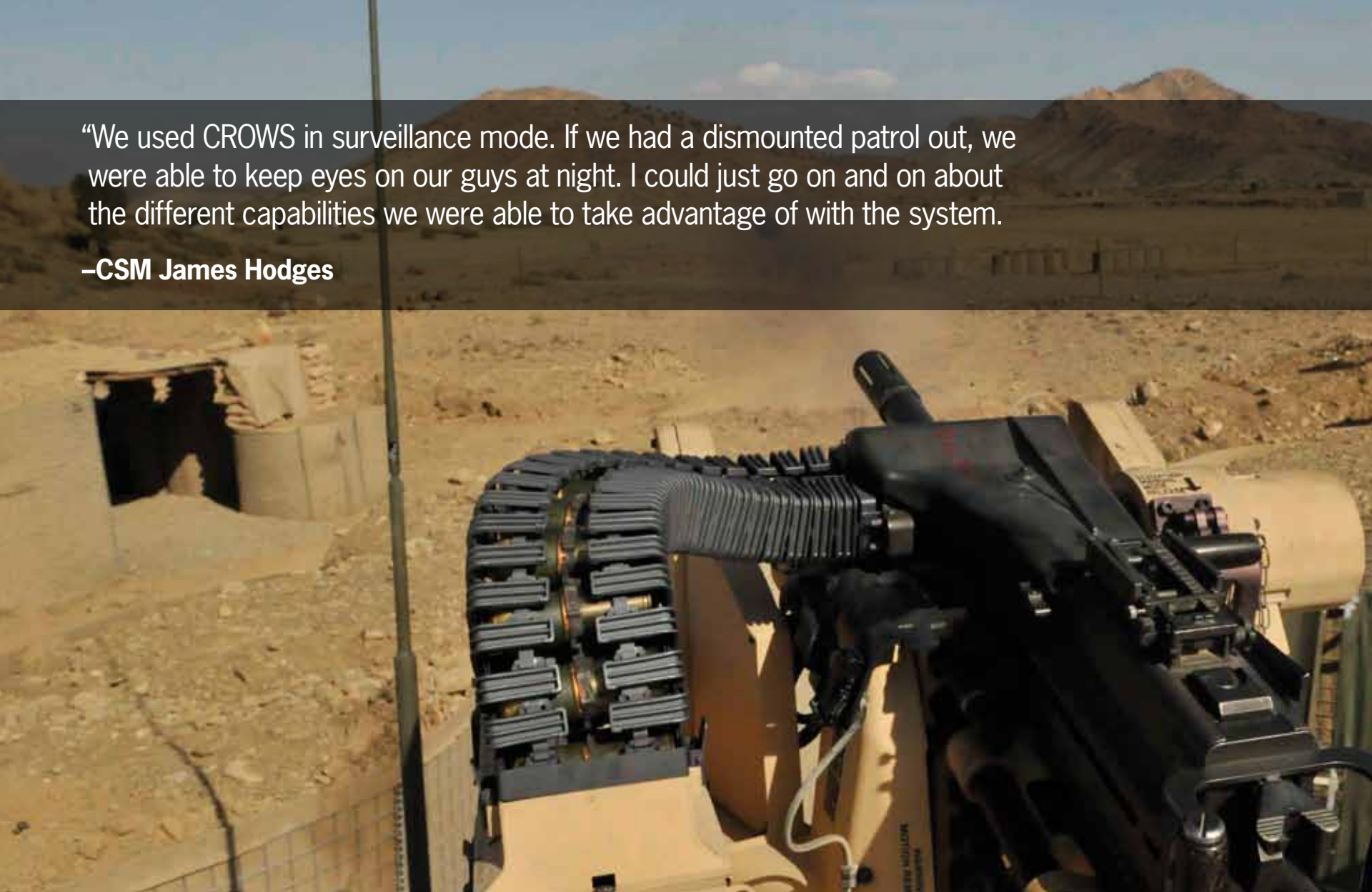
Based upon the outcome of the initial product improvements and the Carbine Competition, PEO Soldier will consider a third phase that will evaluate commercially available operating systems against the performance of the M4A1's operating system. Regardless of the outcome of the Carbine Competition outlined below, the combat-proven M4/M4A1 Carbine will remain in service for years to come.

CARBINE COMPETITION

The second path is the carbine competition, which has been directed by the Secretary of the Army. In support of this directive, the Army has developed a new requirements document for a new carbine that can outperform the current M16 and M4 series weapon systems.

The competition will determine the most effective, accurate, and reliable individual weapon available for the Soldier. Any weapon chosen in the competition would also feature better ergonomic features and be compatible with the current accessories and enablers (i.e. sights, grips, sensors, lasers, grenade launchers, etc). The competition is fully funded through the "Research, Development, Testing & Evaluation" phase. The competition phase is expected to last two years, although the time frames will vary based upon the number of entrants received and qualified for each phase.

After determining the weapon that best meets the requirement, top Army leaders will conduct a cost benefit analysis to determine if it is in the best interest of the Army to procure the winning carbine, and if so, what the ultimate fielding plan would be. Combined, there are currently about 1.1 million M16s and M4s in the Army inventory.



"We used CROWS in surveillance mode. If we had a dismounted patrol out, we were able to keep eyes on our guys at night. I could just go on and on about the different capabilities we were able to take advantage of with the system.

–CSM James Hodges

PRODUCT MANAGER CREW SERVED WEAPONS (PM CSW)

PM CSW is responsible for current and future light and heavy machine guns, grenade launchers, related target acquisition/fire control products, and remote weapons systems.

The **M153 Common Remotely Operated Weapon Station (CROWS)** enables Soldiers to acquire and engage targets while protected inside an armored vehicle.

The **M240L 7.62mm Medium Machine Gun** reduces Soldier combat load by decreasing the weight of the M240B without compromising performance.

M153/A1/A2 Common Remotely Operated Weapon Station (CROWS)

MISSION

Enables Soldiers to acquire and engage targets while protected inside an armored vehicle.

The **M153 Common Remotely Operated Weapon Station (CROWS)** is a stabilized mount that contains a sensor suite and fire control software, allowing on-the-move target acquisition and first-burst target engagement. Capable of target engagement under day and night conditions, the CROWS sensor suite includes a daytime video camera, thermal camera, and laser rangefinder. CROWS is designed to mount on any tactical vehicle and supports the MK19 Grenade Machine Gun, M2 .50 Caliber Machine Gun, M240B Machine Gun, and M249 Squad Automatic Weapon.

M153 CROWS also features programmable target reference points for multiple locations, programmable sector surveillance scanning, automatic target ballistic lead, automatic target tracking, and programmable no-fire zones.

Potential enhancements include integration of other weapons, escalation-of-force systems, sniper detection, integrated 360 degree situational awareness, increased weapon elevation, Javelin integration, and commander's display.

PROGRAM STATUS

- ✔ Fielded over 5,000 M153 CROWS under urgent materiel release in support of Operation New Dawn(OND) and Operation Enduring Freedom (OEF)
- ✔ Integrated on multiple types of platforms
- ✔ **3QFY11** Type Classified -Standard

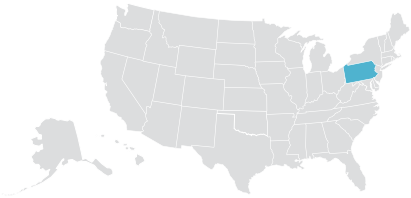
PROJECTED ACTIVITIES

Field and sustain M153 CROWS in support of OND and OEF

- + **1QFY12** Release Request for Proposals
- + **4QFY12** Full Material Release
- + **1QFY13** Contract Award
- + **4QFY12** Full Material Release

CONTRACTORS

Kongsberg Defense & Aerospace (Johnstown, PA)



MK19 Grenade Machine Gun

MISSION

Provides offensive and defensive Soldier support via a tripod- or vehicle-mounted grenade machine gun.

The **MK19 Grenade Machine Gun** supports the Soldier in offensive and defensive roles by delivering a heavy volume of accurate and continuous firepower against enemy personnel and lightly armored vehicles. The MK19 can be mounted on a tripod or on multiple vehicle platforms and is the primary suppressive weapon for combat support and combat service support units. The weapon can be used to protect motor movements, assembly areas, and supply trains in bivouac.

The MK19 Grenade Machine Gun can defend against hovering rotary-wing aircraft, destroy lightly armored vehicles, fire on suspected enemy positions, and provide high-volume fire into an engagement area and indirect fires from hidden positions. The system increases the capability of U.S. forces to defeat opposing armored, mechanized, and infantry forces with high-explosive, dual-purpose ammunition.

Caliber: 40mm
Weight: 77.6 pounds without mount or tripod
Length: 43.1 inches
Range: point target 1,500 meters; area target 2,212 meters

PROGRAM STATUS

- ✔ Production and fielding
- ✔ Actions to address Foreign Military Sales (FMS) requirements are ongoing

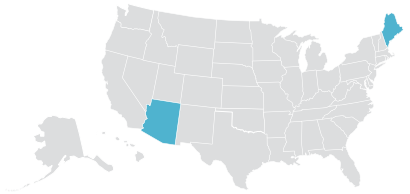
PROJECTED ACTIVITIES

- + Continue production deliveries
- + Continue fielding in support of current operations
- + Contract modifications to address near term FMS buys

CONTRACTORS

General Dynamics Armament and Technical Products (Saco, ME)

Alliant Techsystems (ATK) (Mesa, AZ)



M2/M2A1 .50 Caliber Machine Gun

MISSION

Improves Soldier effectiveness and lethality with a versatile, automatic weapon for offensive and defensive operations, in both ground- and vehicle-mounted roles.

The **M2 .50 Caliber Machine Gun** is automatic, belt-fed, recoil-operated, and air-cooled. It mounts on the M3 tripod and on most vehicles while also serving as an anti-personnel and anti-aircraft weapon. It is highly effective against light armored vehicles, low- and slow-flying aircraft, and small boats. The M2 provides automatic weapon suppressive fire for offensive and defensive purposes. It is capable of single-shot (ground M2 Machine Gun) and automatic fire.

The **M2A1 with Quick Change Barrel (QCB)** is an enhancement to the M2 .50 Caliber Machine Gun offering Soldiers increased performance as well as new features and design improvements that make it easier and safer to use. The M2A1 provides a fixed headspace and timing configuration, flash hider, and removable carrying handle, which increase the performance of the battle-proven M2. The M2A1 speeds target engagement and improves survivability and safety by reducing the time required to change the barrel and eliminating the timely procedure of setting headspace. The flash hider reduces muzzle flash by 95 percent, making the M2A1 less detectable in darkness.

Caliber: .50 caliber (12.7mm)
Weight: M2 receiver and barrel 84 pounds; M2A1 receiver and barrel with flash hider and carrying handle 86 pounds
Length: M2 65.13 inches; M2A1 67.75 inches
Range: 1,830 meters

M2

PROGRAM STATUS

- ✓ GDATP M2 production complete; remaining contract deliveries will be M2A1s
- ✓ U.S. Ordnance completed first article testing. Accepting deliveries.
- ✓ Fielding
- ✓ Sustainment

PROJECTED ACTIVITIES

- + Continue fielding in support of current operations

M2A1

PROGRAM STATUS

- ✓ **1QFY11** Type Classification–Standard
- ✓ **2QFY11** First QCB Kits delivered
- ✓ **2QFY11** Anniston Army Depot conducted pilot overhaul of M2 to M2A1 configuration
- ✓ **2QFY11** Anniston Army Depot began conversions of M2s into M2A1s using QCB conversion kits
- ✓ **3QFY10** Production option awarded for QCB kits at Picatinny Arsenal
- ✓ **3QFY11** GDATP delivered first production M2A1
- ✓ **4QFY11** M2A1 First Unit Equipped

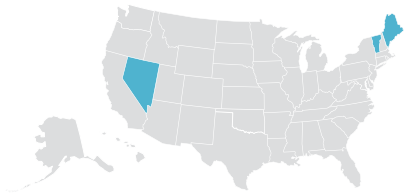
PROJECTED ACTIVITIES

- + Continue M2A1 production and fielding
- + Continue M2A1 QCB Kit deliveries and conversion of M2s into M2A1s at Anniston Army Depot

CONTRACTORS

General Dynamics Armament and Technical Products (GDATP) (Williston, VT); GDATP manufacturing facility in Saco, ME

U.S. Ordnance (McCarran, NV)



LOPEZ

XM806 .50 Caliber Machine Gun

MISSION

Provides vehicle and weapon squads with a lightweight .50 caliber weapon system that is easily dismounted.

The **XM806 Caliber .50 Machine Gun** weighs approximately one-half as a similarly configured M2 and reduces the recoil by at least 60 percent. This lighter weight permits easy dismount and ground transportability. The lower recoil reduces strain on vehicle mounts and permits the use of an optic for greater lethality through increased first-burst accuracy and control.

The XM806 can fire all of the .50 caliber service ammunition in the current inventory and is capable of defeating personnel and lightly armored targets out to 1,830 meters. It is designed to augment the M2 .50 Caliber Machine Gun, but can also be used to replace the M2 in select operational locations. Safety is improved through a manual safety and a quick change barrel that eliminates the requirement for the operator to adjust headspace and timing.

The weapon is ideal for light infantry and special operations forces, as well as for vehicles demanding more lethality but lighter weight.

Caliber: .50 caliber (12.7mm)

Weight: 45 pounds (requirement: 49 pounds)
Length: 56.9 inches charged, 64.7 inches uncharged
Range: 1,830 meters

PROGRAM STATUS

- ✔ **4QFY08** Milestone B
- ✔ **4QFY08** Initiated engineering and manufacturing development phase
- ✔ **3QFY11** Completed Development Test Phase 1
- ✔ **4QFY11** Development Test Phase 2 initiated

PROJECTED ACTIVITIES

- \+ **1QFY12** Start Limited User Test
- \+ **2QFY12** Milestone C - Low Rate Initial Production

CONTRACTORS

General Dynamics Armament and Technology Products (Williston, VT)

M240B/L/H 7.62mm Medium Machine Gun

MISSION

Provides significant, reliable, and lethal medium support fire for aviation and ground units such as infantry, armor, field artillery, and combat engineers.

The **M240B Medium Machine Gun** is a variant of the M240 mounted on Bradley Fighting Vehicles and Abrams tanks. It has been reconfigured for ground applications with buttstock, bipod, iron sights, and forward rail assemblies. The system has a maximum effective range of 1,800 meters.

The **M240L** incorporates titanium construction and alternative manufacturing methods for fabricating major M240B components to achieve significant weight savings. These improvements reduce the Soldier's combat load while allowing easier handling and movement of the weapon. At 22.3 pounds, the M240L is 5.1 pounds lighter than the M240B and is 5.6 pounds lighter with the short barrel installed. The M240L meets all of the reliability and operational characteristics of the M240B.

The **M240H** (Aviation Version) is designed as the self defensive armament sub-system for the UH-60 and CH-47 helicopters. A key attribute of the system is the ability to employ it as a ground mounted weapon in the case of an emergency. The system delivers two minutes of continuous suppressive fire and demonstrates reliability equal to the M240B.

PROGRAM STATUS

M240B

- ✓ Production and fielding
- ✓ FNM production complete (Jul 2011)
- ✓ Product Qualification/Verification activities on-going for the Colt M240B weapons

M240L

- ✓ Production and fielding
- ✓ **1QFY11** First Unit Equipped
- ✓ **3QFY11** Award bridge quantity of weapons
- ✓ **3QFY11** Release competitive RFP

M240H

- ✓ Fielding complete
- ✓ Completed preplanned product improvements (new CH47 mount cam followers, new bag and frame)
- ✓ Sustainment

PROJECTED ACTIVITIES

M240B

- + **4QFY11** FNM production deliveries complete
- + **4QFY11** Initial Colt production deliveries
- + **Continue** fielding in support of current operations

M240L

- + **2QFY12** Award competitive contract
- + Continue fielding

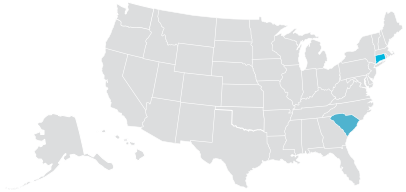
M240H

- + **1QFY12** Begin production of 400-round ammo can
- + **3QFY12** Begin fielding 400-round ammo can
- + Provide program management for replacement CH47 M24 Mount

CONTRACTORS

Fabrique National Manufacturing LLC (FNM) (Columbia, SC)

Colt Defense (West Hartford, CT)



M240B/L Accessories

MISSION

Enhances the capabilities of the M240B/L Medium Machine Gun by improving mobility, reliability, and survivability.

The **M240L Short Barrel** reduces the length of the standard barrel by four inches and the weight by .5 pounds, while maintaining accurate fire at extended ranges. The shorter barrel improves mobility in military operations in urban terrain environments.

The **M240B/L Collapsible Buttstock** improves weapon portability. The Collapsible Buttstock meets the same requirements as the standard buttstock while offering the ability to collapse to various positions without degradation of weapon function.

The **M240B Combat Ammo Pack** provides a lightweight ammunition magazine/container for attachment to the M240B/L Medium Machine Gun. The ammo pack holds 50 rounds of linked 7.62mm ammunition and protects the linked belt from dirt and debris. The ammo pack also allows better movement of the M240B/L during initial insertions and engagements.

The **M240B Adjustable Bipod** provides improved stability on uneven terrain and improved accuracy on hard surfaces by allowing the Soldier to adjust the legs independently.

PROGRAM STATUS

M240L Short Barrel

- ✓ **4QFY11** conducting Producibility Study

Collapsible Buttstock

- ✓ Initial production quantities delivered
- ✓ **3QFY11** Competitive indefinite delivery/ indefinite quantity production contract awarded

Ammo Pack

- ✓ Fielding complete

Adjustable Bipod

- ✓ **4QFY09** Award contract for low-rate initial production quantities

PROJECTED ACTIVITIES

M240L Short Barrel

- + **2QFY12** Contract award
- + **2QFY12** Cut-in to production deliveries

Collapsible Buttstock

- + **1QFY12** Initial fielding

Adjustable Bipod

- + **1QFY12** Initial fielding

CONTRACTORS

Collapsible Buttstock

Design West Aratech (Tustin, CA)

Joint Manufacturing and Technology Center (Rock Island, IL)

Kaeper Machine, Inc. (Mentor, OH)

Combat Ammo Pack

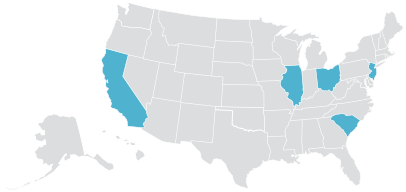
Savit Corp. (Rockaway, NJ)

Adjustable Bipod

Design West Aratech (Tustin, CA)

M240L Short Barrel

Fabrique National Manufacturing LLC (Columbia, SC)



M240B Combat Ammo Pack

M240L Short Barrel

M240B Collapsible Buttstock

M240B Adjustable Bipod

M249 5.56mm Squad Automatic Weapon (SAW)

MISSION

Fills the automatic rifle role in infantry squads and provides light machine gun capabilities in combat service and combat service support units.

The **M249 Squad Automatic Weapon (SAW)** replaces the M16A1 Automatic Rifle at the squad level, as well as some M60 multipurpose machine guns in non-infantry units. It provides squad-level fire support by laying down a base of sustained fire and is routinely used in both mounted and dismounted configurations. At 18 pounds, the M249 delivers greater range and rates of fire than the M16 or M4.

A collapsible buttstock allows shoulder firing in the extended and collapsed positions and improves weapons control when fired in confined spaces. The M249 Short Barrel allows for improved egress and maneuver in close quarter combat. An improved bipod provides Soldiers with increased reliability and weapon accuracy, including on uneven terrain.

The M249 features a hammer-forged steel barrel for enhanced accuracy and long life as well as a hard chrome-plated bore and chamber for greater corrosion resistance.

Standard M249
Caliber: 5.56mm
Weight: 18 pounds
Length: 40.74 inches
Range: point target 600 meters; area target 800 meters

M249 with light-weight collapsible buttstock (pictured below)
Weight: 17.95 pounds
Length: 30.75 - 36.25 inches

PROGRAM STATUS

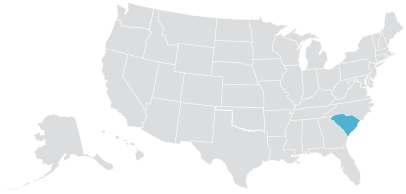
- ✔ Production and fielding

PROJECTED ACTIVITIES

- + Continue production deliveries and Anniston Army Depot overhaul program
- + Continue fielding in support of current operations

CONTRACTORS

Fabrique National Manufacturing LLC (Columbia, SC)



M249 Squad Automatic Weapon (SAW) Accessories

MISSION

Provides the Soldier using the M249 Squad Automatic Weapon with accessories for enhanced performance.

The **M249 Squad Automatic Weapon (SAW) Collapsible Buttstock** allows shoulder firing in the extended and collapsed positions. It maintains a vertical buttstock position for full interface with the operator's shoulder at all times and provides intermediate, locking firing positions, improving weapon control when fired in confined spaces such as military operations in urban terrain (MOUT). The buttstock allows ease of ingress/egress from vehicles and reduces storage space requirements.

The **M249 SAW Improved Bipod** enhances the design of the existing bipod to improve the performance of the weapon, providing the Soldier with increased reliability and weapon accuracy. The bipod legs can be adjusted to different heights, resulting in improved stability on uneven terrain. New production and rebuilt M249s are currently being delivered with the Improved Bipod.

The **M249 SAW 200-Round Soft Pack** program is a follow-on effort to the original 100-Round Soft Pack to help improve ammo container retention to the weapon and reduce the noise signature associated with the standard plastic container. An initial production option awarded in August 2008 for 9,000 M249 200-Round Soft Packs fulfilled requirements for the U.S. government to obtain government purpose rights for competitive procurement.

The **M249 SAW Short Barrel** provides the M249 SAW operator in the automatic rifle role a shorter, lighter weapon for improved mobility in confined spaces with little reduction in accuracy at normal combat ranges. Operational use and training is the same as the standard barrel length M249 SAW. The short barrel improves MOUT, airborne/air assault maneuverability, and jump operations. The short barrel is 4.25 inches shorter than the standard barrel and shortens the weapon by more than 10 inches when combined with the collapsible buttstock. The short barrel is currently under production and is being fielded in support of current operations.

PROGRAM STATUS

M249 SAW Collapsible Buttstock:

- ✔ Production and fielding
- ✔ **3QFY11** Awarded new competitive indefinite delivery/indefinite quantity (IDIQ) contracts for continued production deliveries

M249 Improved Bipod:

- ✔ Production M249s are being delivered with the Improved Bipod

M249 200-Round Soft Pack:

- ✔ Production and fielding

M249 Short Barrel:

- ✔ Production and fielding

PROJECTED ACTIVITIES

SAW Collapsible Buttstock:

- + Production and fielding

SAW Improved Bipod:

- + Production and fielding

200-Round Soft Pack:

- + Production and fielding

SAW Short Barrel:

- + Production and fielding

CONTRACTORS

M249 SAW Collapsible Buttstock

Design West Aratech (Tustin, CA)

Manufacturing Support Industries (Hebron, MD)

Joint Manufacturing and Technology Center (Rock Island, IL)

M249 SAW Improved Bipod

Tri-Technologies Inc. (Mount Vernon, NY)

M249 SAW 200-Round Soft Pack

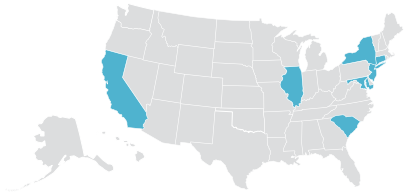
Polymer Technologies Inc. (Clifton, NJ)

Design West Aratech (Tustin, CA)

M249 SAW Short Barrel

Colt Defense LLC (West Hartford, CT)

Fabrique National Manufacturing LLC (Columbia, SC)



M249 SAW 200-Round Soft Pack

M249 SAW Short Barrel

M249 SAW Collapsible Buttstock

M249 SAW Improved Bipod

M145 Machine Gun Optic (MGO)

MISSION

Provides a telescopic sight for the M240B Medium Machine Gun, enabling better target detection, identification, and hit probability.

The **M145 Machine Gun Optic (MGO)** provides machine gunners with the capability to detect, identify, and engage targets at extended ranges. The 3.4x power magnification and wide field of view make this product configurable to mission profiles, operational modes, and environmental conditions. It fits on the M240B/L for infantry, armored cavalry, Special Forces, and combat engineer units.

Additional optics information is available online for individuals with Army Knowledge Online access. PM Soldier Weapons has a website that features operating instructions, training information, repair procedures, contact information and more. Visit: http://optics.army.mil.

PROGRAM STATUS

- ✔ Production complete
- ✔ In sustainment

PROJECTED ACTIVITIES

- \+ Fielding and sustainment

CONTRACTORS

ELCAN Optical Technologies (Ontario, Canada)

Improved Machine Gun Tripod Systems

MISSION

Provide lightweight tripods that enable quicker, more accurate target engagements for dismounted machine guns.

M192 Lightweight Ground Mount for Machine Guns

The **M192** is an improved-capability ground mount that replaces the M122A1 Tripod. The M192 is a compact and collapsible ground mount that reduces the Soldier's combat load and improves Soldier mobility. At 11.5 pounds, the M192 features a lower profile and weighs approximately six pounds less than the M122A1 Tripod it replaced. The mount provides an integral traversing and elevation (T&E) mechanism that allows for quicker, more accurate target engagement and allows for one-handed operation. This T&E mechanism eliminates the user's need for adaptors for separate machine gun pintles and T&E devices.

Other features include a traverse limit stop, a built-in spent case deflector, and the ability to fold up into the spare barrel bag. The mount is constructed with corrosion-resistant materials.

FUTURE SYSTEM: XM205 Lightweight Tripod for Heavy Machine Guns

The XM205 tripod will provide a stable firing platform for the XM806 and replace the M3 tripods currently being used for the M2/M2A1 and MK19. With the 34-pound XM205, the Soldier will experience 32 percent less weight than with the standard 50-pound M3 Tripod with T&E and pintle. Soldiers will also be able to take advantage of the enhanced tripod's integrated T&E mechanism.

The XM205 collapses to less than 50 percent of deployed height and width and will not require adapters. The tripod takes advantage of the full range and versatility of the M2 and MK19 and allows for consistent elevation and depression throughout the full range of motion. The integrated T&E can be operated with one hand.

PROGRAM STATUS

M192

- ✓ Production and fielding

XM205

- ✓ **1QFY11** Initiated Production Verification Testing
- ✓ **4QFY11** Airborne Drop Test conducted
- ✓ **4QFY11** Limited User Evaluation conducted

PROJECTED ACTIVITIES

M192

- \+ Production and fielding

XM205

- \+ **2QFY12** Type Classification
- \+ **2QFY13** First Unit Equipped

CONTRACTORS

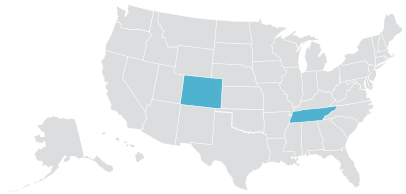
M192

Capco Inc. (Grand Junction, CO)

Universal Technologies Inc. (Estill Springs, TN)

XM205

Capco Inc. (Grand Junction, CO)



Family of Binoculars

MISSION

Provides Soldiers with the ability to conduct enhanced surveillance and battle damage assessment without risk of optical hazard from battlefield lasers.

M22 Binoculars are a ruggedized 7x optics with a 7 degrees 30' Field of View (FOV). The M22 delivers brilliantly focused imagery which enables target identification up to 1000M. The M22 Binoculars provide a high-quality resolution and magnification and it is the Army's standard binocular. At 7.40 inches long, 8.20 inches wide, 7.19 inches tall, and weighing 2.7 pounds, the M22 Binoculars are also known as the Army's "Field Binocular."

M24 Miniature Binocular is a ruggedized 7x optics with a 7 degree field of Vision. It delivers brilliantly focused imagery which enables target identification up to 1,000 meters. It offers the same high-quality resolution and magnification as the Army's standard M22 binoculars. However, at 2.68 inches long, 4.92 inches wide, 5.31 inches tall, and only 1.26 pounds, the M24 Miniature Binoculars are 80 percent smaller and 50 percent lighter than the M22 Binoculars.

M25 Stabilized Binoculars have 14x optics with a 4.3 degree field of vision that deliver brilliantly focused and steady imagery regardless of movement. Its effective range is 4,000 meters. In day mode, the binoculars are direct-view optical devices; for night missions the binoculars offer Optional Interchangeable Image Intensifier GEN III eyepieces. The equipment can be handheld or mounted on a tripod, and can be powered by two AA batteries or vehicle power units via adapter cables. Broadband multilayer coating on the optics enables greater than 90 percent transmission of light.

PROGRAM STATUS

M22

- ✓ In production

M24

- ✓ In production
- ✓ **2QFY10** 3 yr ID/IQ Contract awarded

M25

- ✓ In production
- ✓ **4QFY10** 3 yr ID/IQ Delivery order awarded

PROJECTED ACTIVITIES

M22

- \+ Continue production and sustainment

M24

- \+ Continue production and fielding

M25

- \+ Continue production and fielding

CONTRACTORS

L-3 Communications Electro-Optical Systems (Garland, TX)

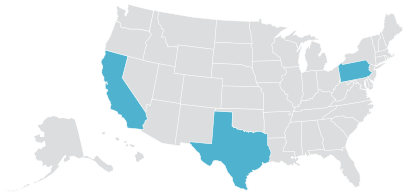
Centron Industries (Carson, CA)

Fraser-Volpe Corp. (Warminster, PA)

M22 Binoculars

M24 Miniature Binoculars

M25 Stabilized Binoculars



Close Combat Mission Capability Kit (CCMCK) System

MISSION

Permits the Soldier to fire 5.56mm (linked/unlinked) man-marking ammunition and 9mm man-marking ammunition in assigned weapons during force-on-force training.

The **M4 Carbine/M16 Rifle Conversion Adapter Kit** is designed for utmost safety, in-service reliability, and maintainability. The kit is easy to install with a simple exchange of the bolt and adapts the host weapon to fire unlinked 5.56mm M1042 Man-Marking ammunition with the feel and function of live ammunition. The kit is designed and engineered with fail-safe measures to prevent the discharge of a standard "live" round.

The **M249 Squad Automatic Weapon (SAW) Conversion Adapter Kit** adapts the host weapon to fire 5.56mm M1071 Linked Man-Marking rounds. The kit is also designed and engineered for utmost safety, in-service reliability, and maintainability. The kit is easy to install with the exchange of the bolt and slide assembly and is expertly engineered with fail-safe measures to prevent the discharge of a standard "live" round.

The **M9** and **M11 Pistol Barrel Adapters** are designed for firing 9mm M1041 Man-Marking cartridges. The barrel bore is off center at the muzzle. Both the barrel and slide are unlocked to ensure reliable functioning of the weapon. To compensate for this, in combination with the low muzzle velocity of the projectile, the barrel bore is canted upward from the chamber to the muzzle to maintain aiming accuracy.

PROGRAM STATUS

- ✔ **FY09** Kits fielded to Training Support Centers

PROJECTED ACTIVITIES

- \+ **FY10–FY14** Kits available for requisition through the supply system

CONTRACTORS

M4 Carbine/M16 Rifle/M249 SAW Conversion Adapter Kit
Ultimate Training Munitions (Suffolk, UK)

M9 and M11 Pistol Barrel Adapter Kit
General Dynamics Ordnance and Tactical Systems (Le Gardeur, Quebec, Canada)

M1041/M1042/M1071 Close Combat Mission Capability Kit Man-Marker Rounds

Protective Mask

M9 and M11 Pistol Barrel Adapters

M4 Carbine/M16 Rifle Conversion Adapter Kit

M249 Squad Automatic Weapon (SAW) Conversion Adapter Kit

Military Combat Eye Protection Goggles are required to be worn with the system

Crew Served Weapons Future CROWS Initiatives

CROWS ENHANCEMENTS

During the past several years, PM Soldier weapons has fielded more than 5,000 CROWS systems to units in theater, dramatically enhancing Soldier lethality and survivability. One of the dynamic aspects of the CROWS platform is the ability to rapidly accessorize and improve upon the system. The following initiatives reflect desired capabilities that have been outlined in requirement documents or originate directly from Soldier feedback and lessons learned in the field. These initiatives represent just a few of the potential future growth areas for weapon station applications.

GREEN LASER ESCALATION OF FORCE KITS

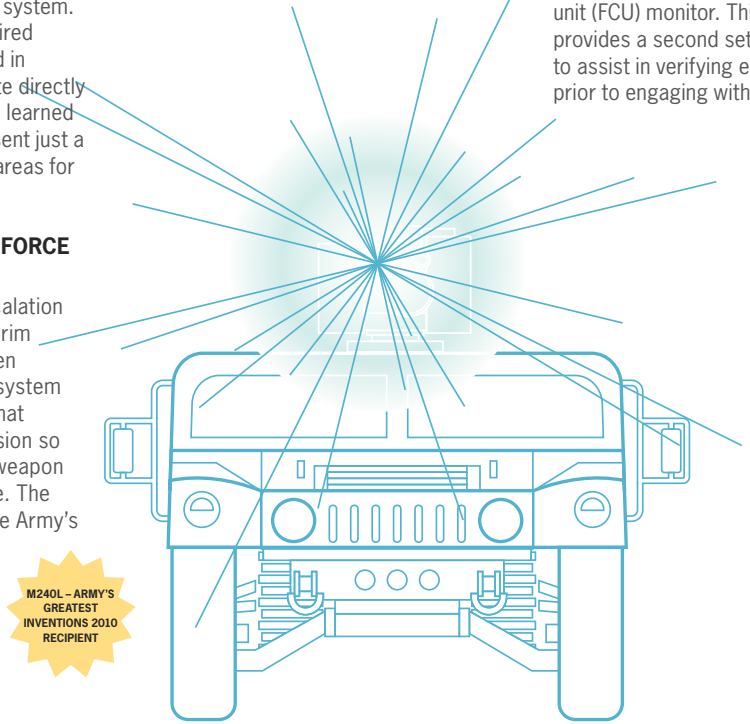
CROWS-mounted Green Laser Escalation of Force kits offer Soldiers an interim step in the escalation of force when conducting daily operations. The system emits a wide band of green light that temporarily disrupts a person's vision so that driving a vehicle or aiming a weapon becomes difficult if not impossible. The Army recognized the kit among the Army's Greatest Inventions of 2010.

INCREASED ELEVATION

Given combat operations in mountainous terrain, there is a benefit to increasing the elevation capability for CROWS-mounted weapon systems.

COMMANDER'S DISPLAY

The Commander's Display accessory provides a second, independent screen for the front seat of a vehicle equipped with CROWS. The additional screen enables the vehicle commander to see exactly what the CROWS operator sees on the fire control unit (FCU) monitor. This added capability provides a second set of eyes on the target to assist in verifying enemy combatants prior to engaging with lethal force.



INTEGRATED JAVELIN CAPABILITY

As part of its objective requirement, Army engineers have worked to integrate Javelin missile systems on to the CROWS platform. This provides a dramatic capability leap to defeat heavily armored vehicles such as tanks by leveraging the precision targeting ability of the CROWS fire control unit and stabilized platform.

SNIPER DETECTION CAPABILITY

The gunshot detection system identifies the location of enemy gunfire. The system detects and locates gunfire in seconds, give audible reports on the range and bearing of the shooter's position (e.g., "Shot, 500 meters, 5 o'clock") and display it on the CROWS FCU with the option for the operator to slew to cue and respond instantly and accurately to hostile fire.

ADDITIONAL WEAPON INTEGRATIONS

In addition to the four standard machine guns (MK19, M2, M240 and M249), the CROWS can integrate additional weapon systems such as the Mk 47 40 mm automatic grenade launcher capable of launching smart programmable air burst 40 mm shells, multi-barrel 7.62 mm mini guns with high rates of fire, and the developmental XM806 .50 Caliber machine gun.

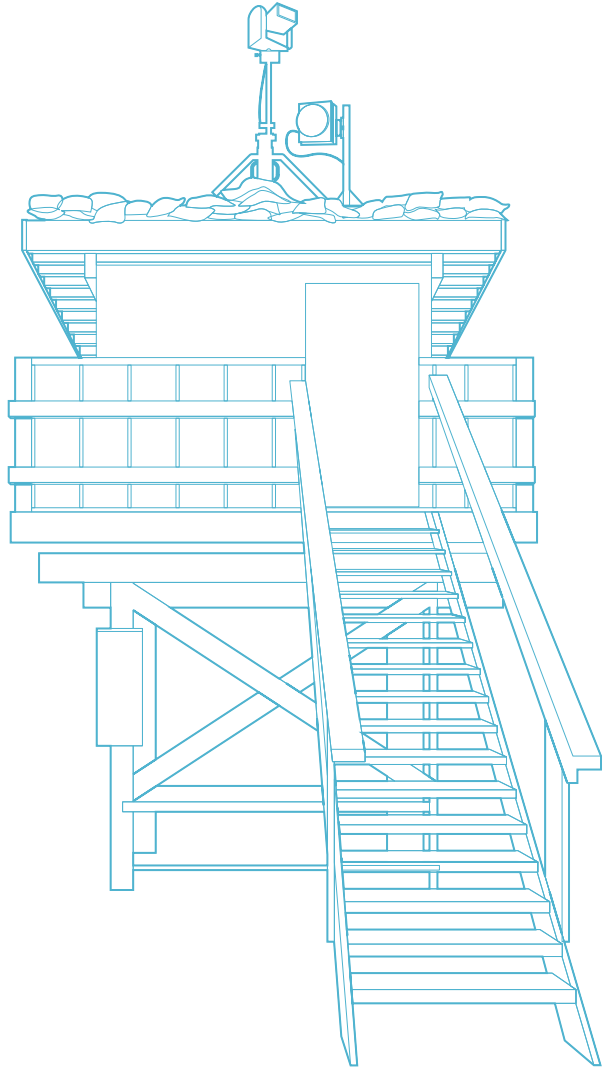
INTEGRATED 360 DEGREE SITUATIONAL AWARENESS

Though CROWS offers Soldiers extraordinary precision fires from under the protection of vehicle armor, there is a trade off in terms of how the limited field of view of the CROWS sensors reduces an operator's situational awareness. To overcome this limitation, engineers are investigating a sensor suite that enables 360 degree situational awareness on the CROWS FCU. The technology will display imagery on the monitor that covers the entire perimeter surrounding the vehicle at any given moment.

STATIC PLATFORM SYSTEMS

With thousands of CROWS systems delivering enhanced capability, lethality, and Soldier protection in theater, Soldiers have begun to look for more ways to leverage remote weapons station (RWS) technology. In particular, Soldiers began submitting requests through the Rapid Equipping Force (REF) for a quick turnaround RWS solution that would enable them to conduct surveillance and engage threats from inside the protection of guard towers.

To meet this demand, PM Crew Served Weapons and Rapid Equipping Force combined efforts to quickly field a light weapon station known as the "Protector Lite" for a variety of guard tower applications. Efforts are ongoing to utilize CROWS for the same application which will provide greater lethality and stand-off capability.



PEO Soldier Online

Find more information on our products, and keep up to date with the latest PEO Soldier developments.

PEO Soldier Website
peosoldier.army.mil

PEO Soldier Blog
http://peosoldier.armylive.dodlive.mil/

Facebook
facebook.com/peosoldier

Flickr
flickr.com/peosoldier

Twitter
twitter.com/peosoldier

Vimeo
vimeo.com/peosoldier

YouTube
youtube.com/user/USArmyPEOSoldier

Glossary

Acquisition Categories (ACAT)

Categories established to facilitate decentralized decision-making and execution and compliance with statutorily imposed requirements. The categories determine the level of review, decision authority, and applicable procedures. The ACATs are listed below:

ACAT I programs are Major Defense Authority Programs (MDAPs [see also Major Defense Acquisition Program]) or programs designated ACAT I by the Milestone Decision Authority (MDA [see also Milestone Decision Authority]).

Dollar value: estimated by the Under Secretary of Defense (Acquisition and Technology) (USD [A&T]) to require an eventual total expenditure for Research, Development, Test and Evaluation (RDT&E) of more than $365 million in Fiscal Year (FY) 2000 constant dollars or, for Procurement, of more than $2.190 billion in FY 2000 constant dollars. ACAT I programs have two sub-categories:

1. ACAT ID for which the MDA is USD (AT&L). The “D” refers to the Defense Acquisition Board (DAB), which advises the USD (AT&L) at major decision points.
2. ACAT IC for which the MDA is the DoD Component Head or, if delegated, the DoD Component Acquisition Executive (CAE). The “C” refers to Component. The USD (A&T) designates programs as ACATID or ACAT IC.

ACAT IA programs are Major Automated Information Systems (MAISs) or programs designated by the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence (ASD [CE3I]) to be ACAT IA. A MAIS is an Automated Information System (AIS) program that is:

1. Designated by the ASD(C3I) as an MAIS; or
2. Estimated to exceed: $32 million in FY 2000 constant dollars for all expenditures, for all increments, regardless of the appropriation or fund source, directly related to the AIS definition, design, development, and deployment, and incurred in any single fiscal year; or $126 million in FY 2000 constant dollars for all expenditures, for all increments, regardless of the appropriation or fund source, directly related to the AIS definition, design,

development, and deployment, and incurred from the beginning of the Materiel Solution Analysis Phase through deployment at all sites; or $378 million in FY 2000 constant dollars for all expenditures, for all increments, regardless of the appropriation or fund source, directly related to the AIS definition, design, development, deployment, operations and maintenance, and incurred from the beginning of the Materiel Solution Analysis Phase through sustainment for the estimated useful life of the system.

ACAT IA programs have two sub-categories:

1. ACAT IAM for which the MDA is the Chief Information Officer (CIO) of the DoD, the ASD(C3I). The M (in ACAT IAM) refers to Major Automated Information System Review Council (MAISRC). (Change 4, 5000.2-R)
2. ACAT IAC for which the DoD CIO has delegated MDA to the CAE or Component CIO. The C (in ACAT IAC) refers to Component.

ACAT II programs are defined as those acquisition programs that do not meet the criteria for an ACAT I program but do meet the criteria for a major system, or are programs designated ACAT II by the MDA.

ACAT III programs are defined as those acquisition programs that do not meet the criteria for ACAT I, ACAT IA, or an ACAT II. The MDA is designated by the CAE and shall be at the lowest appropriate level. This category includes less-than-major AISs.

Acquisition Phase

All the tasks and activities needed to bring a program to the next major milestone occur during an acquisition phase. Phases provide a logical means of progressively translating broadly stated mission needs into well-defined system-specific requirements and ultimately into operationally effective, suitable, and survivable systems.

Advanced Technology Demonstration (ATD)

Used to demonstrate the maturity and potential of advanced technologies for enhanced military operational capability or cost effectiveness, and reduce technical risks and uncertainties at the relatively low costs of informal processes. ATDs are funded with Advanced Technology Development (ATD) funds.

Advanced Technology Development (ATD)

Budget Activity (BA) 3 within a Research, Development, Test and Evaluation (RDT&E) appropriation account that includes development of subsystems and components and efforts to integrate subsystems and components into system prototypes for field experiments and/or tests in a simulated environment. ATD also includes Concept and Technology Demonstrations (CTDs) of components and subsystems or system models. The models may be Form, Fit and Function (F3) prototypes or scaled models that serve the same demonstration purpose. Projects typically have a direct relevance to identified military needs. The result of these type efforts are proof of technological feasibility and assessment of subsystem and component operability and producibility rather than the development of hardware for Service use. Program Elements (PEs) funded under this BA typically involve pre-Milestone B efforts such as system concept demonstrations, joint and Service-specific experiments or technology demonstrations. Advanced Technology Demonstrations are funded with ATD funds. (DoD 7000.14-R)

Block Approach

See Evolutionary Acquisition.

Capability Development Document (CDD)

A document that captures the information necessary to develop a proposed program(s), normally using an evolutionary acquisition strategy. The CDD outlines an affordable increment of militarily useful, logistically supportable and technically mature capability. The CDD supports a Milestone B decision review. The CDD format is contained in CJCSM 3170.01. (CJCSI 3170.01C and CJCSM 3170.01)

Capability Production Document (CPD)

A document that addresses the production elements specific to a single increment of an acquisition program. The CPD must be validated and approved before a Milestone C decision review. The refinement of performance attributes and Key Performance Parameters (KPPs) is the most significant difference between the CDD and CPD. The CPD format is contained in CJCSM 3170.01. (CJCSI 3170.01C and CJCSM 3170.01)

Commercial and Non-Developmental Items

Market research and analysis shall be conducted to determine the availability and suitability of existing commercial and non-developmental items prior to the commencement of a development effort, during the development effort, and prior to the preparation of any product description. For ACAT I and IA programs, while few commercial items meet requirements at a system level, numerous commercial components, processes, and practices have application to DoD systems.

Commercial Off-The-Shelf (COTS)

Commercial items that require no unique government modifications or maintenance over the life cycle of the product to meet the needs of the procuring agency.

Concept and Technology Development

Concept and technology development refers to the development of a materiel solution to an identified, validated need. During this phase, the Mission Needs Statement (MNS) is approved, technology issues are considered, and possible alternatives are identified. In this phase, the initiation concept is approved, a lead component is designated, and exit criteria are established. The leader of the concept development team will work with the integrated test team to develop an evaluation strategy that describes how the capabilities will be evaluated once the system is developed.

Major components of this phase are Concept Exploration, Decision Review, and Component Advanced Development. Concept Exploration evaluates the feasibility of alternative concepts and assesses the merits of these concepts. This phase ends with a Decision Review, at which the preferred concept for the technologies that are available is selected. The Decision Review may also determine whether additional component development is necessary before key technologies can enter System Development and Demonstration. Component Advanced Development occurs when the project leader has a concept for the needed capability, but does not yet know the system architecture. The project exits Component Advanced Development when system architecture has been developed and the component technology has been demonstrated in the relevant environment or the Milestone Decision Authority (MDA) decides to end this effort. This effort is intended to reduce risk on components that have only been demonstrated in a laboratory environment and to determine the appropriate set of subsystems to be integrated into a full system.

Concept Decision (CD)

First decision point of the Defense Acquisition Management Framework. It authorizes entry into the Concept Refinement (CR) phase. The principal document at this decision point is the Initial Capabilities Document (ICD), which also contains an approved plan for conducting an Analysis of Alternatives (AoA). A successful CD does not mean that a new acquisition program has been initiated since funding is normally limited to the CR phase that follows. (DoDI 5000.2) See Program Initiation.

Critical Design Review (CDR)

A multi-disciplined technical review to ensure that a system can proceed into fabrication, demonstration, and test and can meet stated performance requirements within cost, schedule, risk, and other system constraints. Generally this review assesses the system final design as captured in product specifications for each configuration item in the system's product baseline, and ensures that each configuration item in the product baseline has been captured in the detailed design documentation. Normally conducted during the System Development and Demonstration (SDD) phase. (Defense Acquisition Guidebook)

Developmental Test and Evaluation (DT&E)

DT&E shall identify potential operational and technological capabilities and limitations of the alternative concepts and design options being pursued; support the identification and description of design technical risks; and provide data and analysis in support of the decision to certify the system ready for operational test and evaluation.

DODD 5000.01

DoD Directive 5000.01, "The Defense Acquisition System."

DODI 5000.02

DoD Instruction 5000.02, "Operation of the Defense Acquisition System."

Down Select

To reduce the number of contractors working on a program by eliminating one or more for the next phase.

Engineering Change Proposal (ECP)

A proposal to the responsible authority recommending that a change to an original item of equipment be considered, and the design or engineering change be incorporated into the article to modify, add to, delete, or supersede original parts.

Evolutionary Acquisition (EA)

The preferred DoD strategy for rapid acquisition of mature technology for the user according to DoDI 5000.2. An evolutionary approach delivers capability in increments, recognizing up front the need for future capability improvements. There are two approaches to achieving an EA: Spiral Development and Incremental Development as noted below:

1. Spiral Development: In this process, a desired capability is identified, but the end-state requirements are not known at program initiation. Requirements are refined through demonstration, risk management and continuous user feedback. Each increment provides the best possible capability, but the requirements for future increments depend on user feedback and technology maturation. According to DoDD 5000.1, spiral development is the preferred process for executing an EA strategy.
2. Incremental Development: In this process, a desired capability is identified, an end-state requirement is known, and that requirement is met over time by developing several increments, each dependent on available mature technology.

First Unit Equipped (FUE) Date

The scheduled date system or end item and its agreed upon support elements are issued to the designated Initial Operational Capability (IOC) unit and training specified in the new equipment training plan has been accomplished.

Fiscal Year (FY)

For the United States Government (USG), the period covering October 1 to September 30 (12 months).

Full Operational Capability (FOC)

The full attainment of the capability to employ effectively a weapon, item of equipment, or system of approved specific characteristics, which is manned and operated by a trained, equipped, and supported military unit or force.

Full-Rate Production (FRP)

Contracting for economic production quantities following stabilization of the system design and validation of the production process.

Initial Capabilities Document (ICD)

Documents the need for a materiel approach to a specific capability gap derived from an initial Analysis of Materiel Approaches (AMA) executed by the operational user and, as required, an independent analysis of materiel alternatives. The ICD defines the gap in terms of the functional area, the relevant range of military operations, desired effects and time. It also summarizes the results of Doctrine, Organization, Training, Materiel, Leadership, Personnel, and Facilities (DOTMLPF) analysis and describes why nonmaterial changes alone have been judged inadequate in fully providing the capability. (CJCSI 3170.01C)

Initial Operational Capability (IOC)

The first attainment of the capability to employ effectively a weapon, item of equipment, or system of approved specific characteristics with the appropriate number, type, and mix of trained and equipped personnel necessary to operate, maintain, and support the system. It is normally defined in the Capability Development Document (CDD) and the Capability Production Document (CPD).

Initial Operational Test and Evaluation (IOT&E)

Dedicated Operational Test and Evaluation (OT&E) conducted on production, or production representative articles to determine whether systems are operationally effective and suitable, and that supports the decision to proceed Beyond Low-Rate Initial Production (BLRIP).

In-Process Review/Interim Program Review (IPR)

Review body for ACAT III programs. Convened at each formal milestone and at other critical points to evaluate status and make recommendations to the MDA.

Joint Requirements Oversight Council (JROC)

Assists the Chairman, Joint Chiefs of Staff (CJCS) in identifying and assessing the priority of joint military requirements (including existing systems and equipment) to meet the National Military Strategy (NMS). The Vice Chairman of the Joint Chiefs of Staff (VCJCS) chairs the Council and decides all matters before the Council. The permanent members include the Vice Chiefs of the U.S. Army (VCSA) and U.S. Air Force (VCSAF), the Vice Chief of Naval Operations (VCNO), and the Assistant Commandant of the Marine Corps (ACMC). The Council directly supports the Defense Acquisition Board (DAB) through the review, validation, and approval of key cost, schedule, and performance parameters at the start of the acquisition process, prior to each milestone review, or as requested by the Under Secretary of Defense (Acquisition, Technology, and Logistics) [USD(AT&L)].

Live Fire Test and Evaluation (LFT&E)

LFT&E must be conducted on a covered system, major munition program, missile program, or product improvement to a covered system, major munition program, or missile program before it can proceed Beyond Low-Rate Initial Production. A covered system is a vehicle, weapon platform, or conventional weapon system that includes features designed to provide some degree of protection to users in combat and that is an ACATI or II program. Depending upon its intended use, a commercial or non-developmental item may be a covered system, or a part of a covered system. (Change 4, 5000.2-R) Systems requiring LFT&E may not proceed beyond low-rate initial production until realistic survivability or lethality testing is completed and the report required by statute is submitted to the prescribed congressional committees.

Low-Rate Initial Production (LRIP)

The objective of this activity is to produce the minimum quantity necessary to provide production-configured or representative articles for operational tests, establish an initial production base for the system and permit an orderly increase in the production rate for the system that is sufficient to lead to full-rate production upon successful completion of operational testing.

Major Automated Information System (MAIS) Acquisition Program

An AIS acquisition program that is (1) designated by ASD (C3I) as an MAIS, or (2) estimated to require program costs in any single year in excess of $32 million in FY 2000 constant dollars, total program costs in excess of $126 million in FY 2000 constant dollars, or total life-cycle costs in excess of $378 million in FY 2000 constant dollars. MAISs do not include highly sensitive classified programs.

Major Defense Acquisition Program (MDAP)

An acquisition program that is not a highly sensitive classified program (as determined by the Secretary of Defense) and that is: (1) designated by the USD (A&T) as an MDAP, or (2) estimated by the USD (A&T) to require an eventual total expenditure for research, development, test and evaluation of more than $365 million in FY 2000 constant dollars or, for procurement, of more than $2.190 billion in FY 2000 constant dollars.

Milestone (MS)

The point at which a recommendation is made and approval sought regarding starting or continuing an acquisition program, i.e., proceeding to the next phase. Milestones established by DoDI 5000.2 are: MS A approves entry into the Technology Development (TD) phase MS B approves entry into the System Development and Demonstration (SDD) phase MS C approves entry into the Production and Deployment (P&D) phase Also of note are the Concept Decision (CD) that approves entry into the Concept Refinement (CR) phase; the Design Readiness Review (DRR) that ends the System Integration (SI) effort and continues the SDD phase into the System Demonstration (SD) effort; and the Full Rate Production Decision Review (FRPDR) at the end of the Low Rate Initial Production (LRIP) effort of the P&D phase that authorizes Full Rate Production (FRP) and approves deployment of the system to the field or fleet.

Materiel Release Order*

An order issued by an accountable supply system manager (usually an inventory control point or accountable depot or stock point) directing a non-accountable

activity (usually a storage site or materiel drop point) within the same supply distribution complex to release and ship materiel.

Milestone Decision Authority (MDA)

The individual designated in accordance with criteria established by the USD (A&T), or by the ASD (C3I) for AIS acquisition programs, to approve entry of an acquisition program into the next phase.

Modifications

Any modification that is of sufficient cost and complexity that it could itself qualify as an ACAT I or ACAT IA program shall be considered for management purposes as a separate acquisition effort. Modifications that do not cross the ACAT I or IA threshold shall be considered part of the program being modified, unless the program is no longer in production. In that case, the modification shall be considered a separate acquisition effort. (Added from 5000.2-R)

New Start

An item or effort appearing in the President's Budget (PB) for the first time; an item or effort that was previously funded in basic or applied research and is transitioned to Advanced Technology Development (ATD) or engineering development; or an item or effort transitioning into procurement appearing in the PB for the first time in the investment area. Often confused with program initiation, an acquisition term that describes the milestone decision that initiates an acquisition program.

Non-Developmental Item (NDI)

An NDI is any previously developed item of supply used exclusively for government purposes by a Federal Agency, a State or local government, or a foreign government with which the United States has a mutual defense cooperation agreement or any item described above that requires only minor modifications or modifications of the type customarily available in the commercial marketplace in order to meet the requirements of the processing department or agency.

Off-the-Shelf

Procurement of existing systems or equipment without a Research, Development, Test and Evaluation (RDT&E) program or with minor development to make the system suitable for DoD needs. May be commercial system/equipment or one already in DoD inventory. See Commercial and Non-Developmental Item.

Operational Capability

The measure of the results of the mission, given the condition of the systems during the mission (dependability).

Operational Test and Evaluation (OT&E)

OT&E shall be structured to determine the operational effectiveness and suitability of a system under realistic conditions (e.g., combat) and to determine if the operational performance requirements have been satisfied. The following procedures are mandatory: threat or threat representative forces, targets, and threat countermeasures, validated in coordination with the Defense Intelligence Agency (DIA), shall be used; typical users shall operate and maintain the system or item under conditions simulating combat stress and peacetime conditions; the independent operational test activities shall use production or production representative articles for the dedicated phase of OT&E that supports the full-rate production decision, or for ACAT IA or other acquisition programs, the deployment decision; and the use of modeling and simulation shall be considered during test planning. There are more mandatory procedures (9 total) in 5000.2-R. For additional information on acquisition terms, or terms not defined, please refer to AR 70-1, Army Acquisition Policy, available on the Web at http://www.army.mil/usapa/epubs/pdf/r70_1.pdf; or DA PAM 70-3, Army Acquisition Procedures, available on the Web at http://www.dtic.mil/whs/directives/corres/pdf/500002p.pdf.

Operational Support

The objectives of this activity are the execution of a support program that meets the threshold values of all support performance requirements and sustainment of them in the most life-cycle cost-effective manner. A follow-on operational testing program that assesses performance and quality, compatibility, and interoperability, and that identifies deficiencies shall be conducted, as appropriate. This activity shall also include execution of operational support plans, to include the transition from contractor to organic support, if appropriate. (Added from 5000.2-R)

Preliminary Design Review (PDR)

A multi-disciplined technical review to ensure that a system is ready to proceed into detailed design and can meet stated performance requirements within cost (program budget), schedule (program schedule), risk, and other system constraints. Generally, this review assesses the system preliminary design as captured in performance specifications for each configuration item in the system (allocated baseline), and ensures that each function in the functional baseline has been allocated to one or more system configuration items. Normally conducted during the System Development and Demonstration (SDD) phase. (Defense Acquisition Guidebook) See Functional Baseline and Allocated Baseline.

Product Manager (PM)

An HQDA command select list manager for a system or program. A PM may be subordinate to the AAE or PEO. Refers to the management level of intensity the Army assigns to a particular weapon system or information system. A Product Manager is a Lieutenant Colonel or GS-14 (or equivalent).

Production and Deployment (P&D) phase

The purpose of the Production and Deployment phase is to achieve an operational capability that satisfies the mission need. In this phase, software has to prove its maturity level prior to deploying to the operational environment. Once maturity has been proven, the system or block is baseline and a methodical and synchronized deployment plan is implemented to all applicable locations. A system must be demonstrated before DoD will commit to production and deployment. For DOT&E Oversight programs, a system cannot be produced at full-rate until a Beyond Low-Rate Initial Production report has been completed and sent to Congress, the Secretary of Defense, and the USD (UT&L).

The components of this phase include Low Rate Initial Production (LRIP), the Full-Rate Production Decision review, and Full-Rate Production and Deployment. LRIP is intended to result in completion of manufacturing development to ensure adequate manufacturing capability and to produce the minimum quantity necessary for Initial Operational Test and Evaluation. The Full-Rate Production Decision Review considers the cost estimate, manpower, results of test and evaluation, compliance and interoperability certification. Following the completion of a Full-Rate Production Decision Review, the program enters Full Rate Production & Deployment.

Production Qualification Test (PQT)

A technical test completed prior to the Full-Rate Production (FRP) decision to ensure the effectiveness of the manufacturing process, equipment, and procedures. This testing also serves the purpose of providing data for the independent evaluation required for materiel release so that the evaluator can address the adequacy of the materiel with respect to the stated requirements. These tests are conducted on a number of samples taken at random from the first production lot, and are repeated if the process or design is changed significantly, and when a second or alternative source is brought on line.

Production Readiness Review (PRR)

A formal examination of a program to determine if the design is ready for production, production-engineering problems have been resolved, and the producer has accomplished adequate planning for the production phase. Normally performed as a series of reviews toward the end of the System Development and Demonstration (SDD) phase or early in the Production and Deployment (P&D) phase.

Program Initiation

The point at which a program formally enters the acquisition process. Under DoDI 5000.2, program initiation normally occurs at Milestone B, but may also occur at other milestones/decision points depending upon technology maturity and risk. At program initiation, a program must be fully funded across the Future Years Defense Program (FYDP) as a result of the Program Objectives Memorandum (POM)/budget process, that is, have an approved resource stream across a typical defense program cycle, for example Fiscal Year (FY) 2006-2011. Concept Refinement (CR) and Technology Development (TD) phases are typically not fully funded and thus do not constitute program initiation of a new acquisition program in the sense of DoDI 5000.2. This term is often confused with the financial management term new start. See *New Start, Concept Refinement, and Technology Development.*

Program Management

The process whereby a single leader exercises centralized authority and responsibility for planning, organizing, staffing, controlling, and leading the combined efforts of participating/assigned civilian and military personnel and organizations, for the management of a specific defense acquisition program or programs, throughout the system life cycle.

Qualification

The formal process by which a manufacturer's product is examined for compliance with the requirements of a source control drawing for the purpose of approving the manufacturer as a source of supply.

Qualification Test

Simulates defined operational environmental conditions with a predetermined safety factor, the results indicating whether a given design can perform its function within the simulated operational environment of a system.

1. Activities for the development of a new system or to expand the performance of fielded systems.
2. An appropriation.

Soldier Enhancement Program (SEP)†

Approved by Congress in 1989 and revised in 1992 with the aim of speeding the "factory to foxhole" process to enhance Soldier lethality, survivability, mobility, command and control, and sustainability with improved weapons and equipment.

Spiral Development

See Evolutionary Acquisition.

Sustainment

1. The first effort of the Operations and Support (O&S) phase established and defined by DoDI 5000.2. The purpose of the Sustainment effort is to execute the support program to meet operational support performance requirements and sustain the system in the most cost-effective manner over its life cycle. Sustainment includes supply, maintenance, transportation, sustaining engineering, data management, Configuration Management (CM), manpower, personnel, training, habitability, survivability, environment, safety (including explosives safety), occupational health, protection of critical program information, anti-tamper provisions, Information Technology (IT) (including National Security Systems [NSS]), supportability, and interoperability functions. Sustainment overlaps the Full Rate Production (FRP) and Deployment effort of the Production and Deployment (P&D) phase. (DoDI 5000.2)
2. The provision of personnel, logistic, and other support required to maintain and prolong operations or combat until successful accomplishment or revision of the mission or of the national objective. (CJCSI 3170.01C)

System Development and Demonstration (SDD)

System development and demonstration is the process of developing concepts into producible and deployable products that provide capability to the user. The purpose of this phase is to develop a system, reduce program risk, ensure operational supportability, design for producibility, ensure affordability and demonstrate system integration, interoperability, and utility. The major components of this phase are System Integration, System Demonstration, and Interim Progress Review. Development is aided by the use of simulation, and test and evaluation activities are integrated into an efficient continuum planned and executed by a Test and Evaluation Integrated Product Team (T&E IPT).

The independent planning, execution, and evaluation of dedicated Initial Operation Test and Evaluation (IOT&E), if required, are the responsibility of the appropriate operational test activity (OTA). The program enters System Integration when the Project Manager has architecture for the system, but has not yet integrated the subsystems into a complete system. This effort is intended to integrate the subsystems and reduce system-level risk. The purpose of the Interim Progress Review is to confirm that the program is progressing as planned or to adjust the plan to better accommodate progress made to date, changed circumstances, or both. The program enters System Demonstration when the Project Manager has demonstrated the system in prototype articles.

System Integration (SI)

The first effort of the System Development and Demonstration (SDD) phase. A program enters System Integration (SI) when the Program Manager (PM) has a technical solution for the system, but has not yet integrated the subsystems into a complete system. The Capability Development Document (CDD) guides the effort, which typically includes demonstration of prototype articles or Engineering Development Models (EDMs). A successful Design Readiness Review (DRR) ends the SI effort. (DoDI 5000.2)

System of Systems (SoS)

A set or arrangement of interdependent systems that are related or connected to provide a given capability. The loss of any part of the system will degrade the performance or capabilities of the whole. (CJCSI 3170.01C)

Test and Evaluation (T&E)

The process by which a system or components are exercised and results analyzed to provide performance-related information. The information has many uses including risk identification and risk mitigation and empirical data to validate models and simulations. T&E enables an assessment of the attainment of technical performance, specifications and system maturity to determine whether systems are operationally effective, suitable and survivable for intended use, and/or lethal. There are three distinct types of T&E defined in statute or regulation: Developmental Test and Evaluation (DT&E), Operational Test and Evaluation (OT&E), and Live Fire Test and Evaluation (LFT&E). See Operational Test and Evaluation, Initial Operational Test and Evaluation (IOT&E).

Type Classification (TC)

The process that identifies the life cycle status of a materiel system after a production decision by the assignment of a type classification designation. The process records the status of a materiel system as a guide to procurement, authorization, logistical support, asset, and readiness reporting. Satisfies DoD requirement to designate when a system is approved for Service use: (Army). Under Secretary of Defense (Acquisition, Technology, and Logistics) (USD (AT&L)); Office of the Under Secretary of Defense (Acquisition, Technology, and Logistics) (OUSD (AT&L)). The OUSD (AT&L) is organized around services, Research and Development (R&D), and materiel acquisition. Several organizational elements report directly to the USD (AT&L) including the Principal Deputy USD (PDUSD (AT&L)), the Director, Defense Research and Engineering (DDR&E), the DUSD (Logistics and Materiel Readiness), and the Director, Ballistic Missile Defense Organization (BMDO). Also reporting into staff elements within OUSD (AT&L) are a number of Defense agencies such as the Defense Logistics Agency (DLA) and the Defense Advanced Research Projects Agency (DARPA). All acquisition-related definitions are taken from the Defense Acquisition University (DAU) Glossary. For further information on acquisition-related terminology, see DAU's site at http://akss.dau.mil/jsp/Glossary.jsp.

Those entries marked with * derive from the DoD Dictionary of Military Terms, http://www.dtic.mil/doctrine/dod_dictionary/.

Those marked with the † symbol are adapted from other sources.

Contractors By State

ALABAMA
Alabama Industries for the Blind
American Apparel
Communications & Ear Protection Inc.
Huntsville Rehabilitation Foundation
Science & Engineering Services Inc.
Taylor-Wharton
Westwind Technologies Inc.

ARIZONA
Alliant Techsystems (ATK)
ArmorWorks
BAE Systems
General Dynamics
General Dynamics C4S
GG&G Inc.
L-3 Warrior Systems Electron Tube Operations (ETO)

ARKANSAS
The Glove Corp.

CALIFORNIA
Airborne Systems NA
Arena Industries
Armacel
BAE Systems
Bijan Protective Equipment
Centron Industries
Ceradyne Inc.
Design West Aratech
Fire Force Tactical Gear Inc.
Flight Suits
Gentex Corporation
Gibson and Barnes
HWI Gear Inc.
Laser Devices Inc.
NovaTac Inc.
Oakley USA
Paulson Manufacturing
Raytheon
Raytheon Space & Airborne Systems
Rockwell Collins
Secure Communication Systems Inc.
SureFire
US Divers
Wiley X Eyewear by Protective Optics Inc.
Xeonics

COLORADO
Capco Inc.

CONNECTICUT
Colt Defense
Colt Defense LLC
Colt's Manufacturing Co.
Interspiro
O.F. Mossberg & Sons Inc.
Okay Industries Inc.

DELAWARE
Masley Enterprises Inc.

DISTRICT OF COLUMBIA
Federal Prison Industries
General Services Administration Global Supply

FLORIDA
Bernard Cap Co.
Coastal Enterprises
DRS
DRS Optronics
Goodwill Industries
Grip Pod Systems
Knight's Armament Co.
L-3 Communications CyTerra
Northrop Grumman Laser Systems
Northrop Grumman Guidance and Electronics, Laser Systems
Phantom Products Inc.
Point Blank Body Armor
The Protective Group Inc.
Protective Materials Co.
Protective Products Enterprise
Source One Distributors
SPA Defense/NovaTac

GEORGIA
Altama Footwear
Ashland Sales and Service
Bremen Bowdon

Fellfab
Iguana LLC
Middle Georgia
Tencate
UNICOR
Woolrich Inc.

IDAHO
Eye Safety Systems Inc.
Smith Optics

ILLINOIS
Airtronic Services Inc.
Army effort at TACOM Lifecycle Management Command
Belleville Shoe Manufacturing Co.
First-Light USA
Joint Manufacturing and Technology Center
Nationwide Glove Co. Inc.
Norcross Safety Products
Norcross Safety Products/Honeywell
Thor Defense Inc.

INDIANA
Raytheon Technical Services
UNICOR

IOWA
Ansell Hawkeye Inc.
Brownells Inc.
Rockwell Collins

KANSAS
Bushnell Inc.
Center Industries Corp.

KENTUCKY
Ashland Sales/Macon
P & S Products Inc.
Pioneer Vocational Industrial Services
Southeastern Kentucky Rehabilitation Industries
UNICOR

LOUISIANA
Wellstone Apparel

MAINE
Creative Apparel
General Dynamics Armament and Technical Products
Group Home Foundation
Source for Native American Products (SNAP)

MARYLAND
Beretta U.S.A. Corp.
Elite Issue
Manufacturing Support Industries
Thales

MASSACHUSETTS
BAE Systems
Eagle Industries
General Dynamics
Protech Armored Products
Samson Manufacturing Inc.

MICHIGAN
Bates Uniform Footwear
General Dynamics Land Systems
Peckham Vocational Industries
Sage International, LTD
Telex Communications Co.
Trijicon
Wolverine Worldwide

MINNESOTA
Alliant Techsystems
Ames True Temper
Benchmark Electronics

MISSISSIPPI
Golden Manufacturing
Pioneer Aerospace Corp.
Wellstone Apparel
UNICOR

MISSOURI
Eagle Industries
Eagle Industries/ATK
Energizer Holdings Inc.
Nevada
U.S. Ordnance

New Hampshire
BAE Systems
Insight Technology Inc.
L-3 Insight Technology Inc.
L-3 Warrior Systems Electron Tube Operations (ETO)
Saint-Gobain
New Jersey
Bethel Industries
DeRossi & Son Co.
Harris Manufacturing Co.
Military Equipment Corp. of America
Polymer Technologies Inc.
Savit Corp.
Sonetronics
New York
Allen Vanguard
Astrocom Electronics Inc.
Carleton Technologies Inc.
Hercules Glove Manufacturing
Human Technologies
Industries for the Blind
Med-Eng Systems Inc.
Otis Products Inc.
Oxygen Generating Systems International
Remington Arms Co. Inc.
Sandina Enterprises
Seneca-Cayuga Counties Chapter, NYSARC Inc.
Telephonics Corp.
Tennier Industries Inc.
Travis Association for the Blind
Tri-Technologies Inc.
North Carolina
Federal Covers and Textiles
Fox Apparel
General Dynamics Armament and Technical Products Inc.
KDH Inc.
McRae Industries Inc.
Mills Manufacturing Corp.
MSA Paraclete
National Industries of the Blind Inc.
Pickett Hosiery Mills
Royal Park Uniforms
Special T Hosiery Mills
UNICOR
Wellco Enterprises Inc.
Ohio
Guardian Manufacturing
Kaeper Machine, Inc.
Morning Pride Manufacturing
Rocky Boot
SSK Industries
Team Wendy
Vocational Guidance Service (VGS Inc.)
Oregon
Danner Inc.
Gerber Legendary Blades
Leupold & Stevens Inc.
Massif Mountain Gear Co.
Mountain High Equipment & Supply Co.
Oregon Aero
Pennsylvania
BAE Systems
Fraser-Volpe Corp.
Gentex Corporation
Gentex Optics Inc.
Indogem Inc.
KDH Defense Systems Inc.
Kongsberg Defense & Aerospace
L-3 Communications/Brashear
Peak Beam
Streamlight
Puerto Rico
API Manufacturing
DJ Manufacturing
Kandor Manufacturing
Propper International
SNC Manufacturing
Wear-Tech

RHODE ISLAND

Northwest Woolen Mills
Sperian Eye and Face Protection Inc. (AKA UVEX)

SOUTH CAROLINA
Fabrique National Manufacturing LLC
North Safety Products

SOUTH DAKOTA
Aerostar International

TENNESSEE
Barrett Firearms Manufacturing
Lions Volunteer Blind Industries
Omega
Tennessee Apparel Corp.
Tullahoma Industries
Universal Technologies Inc.

TEXAS
BAE Systems
DRS Optronics
EFW Inc.
Elbit Systems of America (ESA)
L-3 Communications Electro-Optical Systems
L-3 Warrior Systems Electron Tube Operations (ETO)
Raytheon
ReadyOne
Reyes
Sidran Inc.
Travis Association for the Blind
UNICOR

UTAH
JDLL

VERMONT
General Dynamics Armament and Technology Products
Mine Safety Appliances
Revision Military LTD.

VIRGINIA
Aerial Machine & Tool Corp.
Aimpoint Inc.
Ashbury International Group Inc.
ASP
Atlantic Dive Supply (ADS)
BAE Systems
Booz Allen Hamilton
Capps Shoe Co. Inc.
Heckler & Koch Defense
Industries for the Blind
ITT Industries Night Vision
ITT Geospatial Systems
Jensen Apparel
London Bridge Trading Company
M&B Headwear
National Industries for the Blind
National Institute for the Severely Handicapped Inc.
QinetiQ North America
Ring Side
StEPS
Vertu Corp.

WASHINGTON
B.E. Meyers
Cascade Designs Inc.
National Institute for the Blind
Seattle Lighthouse for the Blind

WISCONSIN
Weinbrenner Shoe Company Inc.

International Contractors

CANADA

Airboss Defense

ELCAN Optical Technologies

General Dynamics Ordnance and Tactical Systems

GERMANY

H&K Gmbh

ISRAEL

Elbit Systems Limited

UNITED KINGDOM

Civil Defense Supply (International) Ltd.

Ultimate Training Munitions

Index

A

Advanced Bomb Suit (ABS) 14, 15
Advanced Combat Helmet (ACH) 9, 20, 21
Air Soldier System (AirSS) 160
Air Warrior (AW) 158, 159
All-Weather Coat 42, 43
Alternative Footwear System (AFS) 96, 97
AN/AVS-6 Aviator's Night Vision Imaging System (ANVIS) 124, 125
AN/AVS-7(V) Heads-Up Display (HUD) 174, 175
AN/PAS-13 Thermal Weapon Sight (TWS) 116, 118, 119
AN/PAS-13(V)1 Light Weapon Thermal Sight (LWTS) 118
AN/PAS-13(V)2 Medium Weapon Thermal Sight (MWTS) 118
AN/PAS-13(V)3 Heavy Weapon Thermal Sight (HWTS) 118
AN/PED-1 Lightweight Laser Designator Rangefinder (LLDR) 145, 148, 149
AN/PEQ-14 Integrated Laser White Light Pointer (ILWLP) 132, 133
AN/PEQ-15A Dual Beam Aiming Laser – Advanced2 (DBAL-A2) 131, 132
AN/PEQ-15 Advanced Target Pointer Illuminator Aiming Light (ATPIAL) 131, 132
AN/PPS-26 Sense Through The Wall (STTW) 134, 135
AN/PSQ-20 Enhanced Night Vision Goggle (ENVG) 120
AN/PSQ-23 Small Tactical Optical Rifle Mounted (STORM) Micro-Laser Rangefinder (MLRF) 152, 153
AN/PVS-10 Sniper Night Sight (SNS) 220
AN/PVS-14 Monocular Night Vision Device (MNVD) 122, 123, 222
AN/PVS-30 Clip-on Sniper Night Sight (Clip-on SNS) 128, 129
Apache Aircrew Integrated Helmet (AAIH) 168, 169
Army Aircrew Combat Uniform (A2CU) 46, 47
Army Combat Boot (Hot Weather) [ACB (HW)] 66
Army Combat Boot (Hot Weather–Fire Resistant) [ACB (HW-FR)] 66
Army Combat Boot (Hot Weather–Safety Toe) [ACB (HW-ST)] 66
Army Combat Boot (Temperate Weather) 62, 63
Army Combat Pant (ACP) 52, 53
Army Combat Shirt (ACS) 50, 51
Army Combat Uniform (ACU) 44, 45
Army Elements Fleece (AEF) 58, 59
Army Service Uniform (ASU) 40, 41

B

Ballistic and Non-Ballistic Protection 34, 35
Ballistic Body Shield 34
Ballistic Face Shield 34, 35
Barbed Wire Handlers' Gloves 74, 75
Beret 42, 43
Body Armor, Family of Concealable (FoCBA) 18, 19
Body Armor, Legacy Concealable (CBA) 16, 17
Brown Bath Towel 76, 77

C

Camouflage Face Paint (CFP) 98, 99
Chemical and Biological (CB) Protective Equipment Bag 96, 97
Chemical Protective Glove Set 96, 97
Chemical Protective Helmet Cover 96, 97
Chemical Protective Undergarment (CPU) 94, 95
Close Quarters Battle Kit (CQB Kit) 234, 235
Cold Weather Canteen System 82, 83
Cold Weather Trigger Finger (TF) Mitten Shells 70, 71
Cold Weather Trigger Finger (TF) Mitten Inserts 71
Combat Glove 72, 73
Combat Helmet Suspension System 24, 25
Combat Vehicle Crewman Helmet (CVCH) 26, 27
Combat Vehicle Crewman's (CVC) Glove 72, 73
Common Remotely Operated Weapon Station (CROWS) 239, 240, 241
Communication Ear Plugs (CEP) 166
Communications Enhancement and Protection System (CEPS) 158, 166, 167
Concealable Body Armor (CBA) 16, 17, 18
Cordless Communications System 194, 195
Crew Served Weapons Light (CSWL) 84, 138, 139

D

Data Retrieval System (DRS) 28, 29
Defense Advanced Research Projects Agency (DARPA) 236

E

Electronic Automatic Activation Device (EAAD) 104, 105
Electronic Data Manager (EDM) 157, 158, 160, 170, 171
Encrypted Aircraft Wireless Intercom System (EAWIS) 158, 161, 163
Enhanced Combat Helmet (ECH) 22, 23
Enhanced Night Vision Goggle (ENVG) 117, 120, 121
Enhanced Side Ballistic Insert (ESBI) 10
Enhanced Small Arms Protective Insert (ESAPI) 10
Entrenching Tool (E-Tool) 80, 81
Equipment Belt Extender (EBE) 80, 81
Extreme Cold Weather Boot (ECWB) 64
Extreme Cold Weather (ECW) Mitten Set 70, 71

F

Family of Binoculars 260
Family of Concealable Body Armor (FoCBA) 18, 19
Family of Flashlights (FoF) 84, 85, 138
Family of Weapon Sights (FWS) 126
Family of Weapon Sights, Individual (FWSI) 126
Family of Weapon Sights, Crew Served (FWSCS) 126
Family of Weapon Sights, Sniper (FWSS) 126
Field Case 80, 81
Flame Resistant Environmental Ensemble (FREE) 54, 55
Fleece Cap 76, 77
Fuel Handlers' Gloves (FHG) 74, 75
Future Enhanced Sniper Systems 236

G

Generation II Helmet Sensor (GEN II HS) 28, 29, 37
Generation III Extended Cold Weather Clothing System (GEN III ECWCS) 60, 61
Ghillie Suit Accessory Kit (GSAK) Upgrade 90, 91
Green Laser Interdiction System (GLIS) 142, 143
Green Vinyl Overboots/Black Vinyl Overboots (GVO/BVO) 96, 97

H

Harness, Single-Point Release (HSPR) 110, 111
Hat, Sun Hot Weather (Boonie Hat) 76, 77
Head Gear System 36
Helmet-Mounted Display 194, 195
HGU-56/P Aircrew Integrated Helmet System (AIHS) 158, 164, 165

I

Improved Boot Sock 76, 77
Improved Combat Vehicle Crewman (iCVC) Coverall 48, 49, 57
Improved Outer Tactical Vest (IOTV) 10
Improved Toxicological Agent Protective (ITAP) Suit 98, 99
Individual Body Armor 36
Individual Desalination Systems (IDCS) 113
Individual Gunshot Detector (IGD) 117, 136, 137
Individual Water Treatment Device (IWTD) 82
Infrared Retroreflective (IR) Flag 54, 55
Insect Hat 76
Insect Net 76
Integrated Laser White Light Pointer (ILWLP), AN/PEQ-14 132, 133, 226
Interceptor Body Armor (IBA) 10
Intermediate Cold Weather (ICW) Flyer's Gloves 70
Intermediate Cold Wet Boot with Removable Liner (ICWB w/RL) 64
Intermediate Cold Wet Glove (ICWG) 68, 69

J

Joint Block II Glove Upgrade (JB2GU) Non-Fire Resistant (nFR) 96
Joint Effects Targeting System (JETS) 150, 150
Joint Protective Aircrew Ensemble (JPACE) 94, 95
Joint Service Lightweight Integrated Suit Technology (JSLIST) 94, 95
Joint Service Lightweight Integrated Suit Technology (JSLIST) Chemical Biological Coverall for combat vehicle crewmen (JC3) 94, 95

K

Knee and Elbow Pads (KEP) 76, 77

L

LA-8/P Aircrew Laser Pointer (ALP) 140, 141
Land Warrior (LW) 184, 185, 186, 187
Laser Eye Protection Visor 176, 177
Laser Target Locators (LTL) 144, 146, 147
Laser Target Locators Mark VII 145, 146, 147
Laser Target Locators Mark VIIE 145, 146, 147
Laser Target Locators Vector 21 145, 146, 147
Laser Target Locators TRIGR 145, 146, 147
Light Duty Utility Gloves (LDUG) 74, 75
Lightweight Performance Hood (LPH) 92, 93

M

M2 .50 Caliber Machine Gun 240, 244, 245
M2A1 with Quick Change Barrel (QCB) 244
M4 Adapter Rail System (ARS) 202
M4/M4A1 Carbine 202, 206, 208, 210, 224, 228, 230, 234, 237
M4 Carbine/M16 Rifle Conversion Adapter Kit 262, 263
M5 Adapter Rail System (ARS) 204
M9 and M11 Pistol Adapters 262, 263
M9 Pistol 226, 227
M9 Pistol Rail System 226
M14 Enhanced Battle Rifle (EBR) 224, 225
M16A2/A4 Series 5.56mm Rifle 204, 205, 208
M16/M4 Magazine 228, 229
M22 Binoculars 260
M24 Miniature Binoculars 260, 261
M24 Sniper Weapon System (SWS) 218, 220, 221
M25 Stabilized Binoculars 260
M26 12-Gauge Modular Accessory Shotgun System (MASS) 202, 210, 211
M68 Close Combat Optic (CCO) 230, 231
M107 Semi-Automatic Long Range Sniper Rifle (LRSR) 214, 215
M110 7.62mm Semi-Automatic Sniper System (SASS) 218, 219
M145 Machine Gun Optic (MGO) 256, 257
M150 Rifle Combat Optic (RCO) 232, 233
M151 Improved Spotting Scope 218, 222
M151 Tactical Tripod Kit 222
M153/A1/A2 Common Remotely Operated Weapon Station (CROWS) 238, 239, 240, 241
M192 Lightweight Ground Mount for Machine Guns 258, 259
M203A2 Grenade Launcher 202, 208, 209
M203 Day-Night Sight (DNS) 208
M240B Adjustable Bipod 250, 251
M240B Combat Ammo Pack 250, 251
M240B Short Barrel 250, 251
M240B/L Collapsible Buttstock 250, 251
M240B/L/H 7.62mm Medium Machine Gun 240, 248, 249, 250, 256
M240H 7.62mm Machine Gun (Aviation Version) 248
M240L 7.62mm Medium Machine Gun (Light) 239, 248
M249 SAW 200-Round Soft Pack 254, 255
M249 SAW Improved Bipod 254, 255
M249 SAW Short Barrel 254, 255
M249 Squad Automatic Weapon (SAW) 240, 252, 253
M249 Squad Automatic Weapon (SAW) Collapsible Buttstock 254, 255
M249 Squad Automatic Weapon (SAW) Conversion Adapter Kit 262, 263
M320 Grenade Launcher (GL) 202, 206, 207
M500 Shotgun 212, 213
M-1950 Weapons Case 110, 111
Man Portable Desalination System 112
Mark VII 144, 145, 146, 147
Mark VII E 145, 146, 147
Mass Tactical Canopy (T-11) Personnel Parachute System 39, 108, 109
Maternity Cardigan Sweater 42, 43
Mattock 80, 81
Maxillofacial Shield (MFS) 178, 179
MC1-1C 106
MC-6 Maneuverable Canopy Personnel Parachute System 106
Men's and Women's Heavy Duty Gloves 74, 75
Men's Class B Service Uniform 42
Men's Green Class A Service Uniform 42, 43
Microclimate Cooling System (MCS) 158, 180, 181, 194, 195
Military Combat Eye Protection (MCEP) 30, 31, 32, 33
Military Free Fall (MFF) Advanced Ram Air Parachute System (ARAPS) 104, 105
MK19 Grenade Machine Gun 240, 242, 243
Modern Army Combatives Kit (MACK) 100, 101
Modified Improved Reserve Parachute System (MIRPS) 102
Modular Aircrew Common Helmet (MACH) 160
Modular Boot System (MBS) 64, 65
Modular Lightweight Load-carrying Equipment (MOLLE) Hydration System 82, 83
Modular Lightweight Load-carrying Equipment (MOLLE) 78, 79
Modular Sleep System (MSS) 86, 87
Mountain Combat Boot (MCB) 64, 65
Mounted Crewman Compartmented Equipment Bag (MCCEB) 80
Mounted Soldier System (MSS) 193, 194
Multifunction Aiming Light (MFAL) 130, 131
Multi-Purpose Personal Hydration System (MPHS) 82

N
Navigation Aid (NAVAID) 104, 105
Nett Warrior (NW) 185, 188, 189
Next Generation Helmet Sensor 37
Non-Ballistic Face and Body Shields 34, 35
Non-Destructive Test Equipment (NDTE) 10
Non-Maneuverable Canopy (T-11) Personnel Parachute System 108, 109

O
One-Quart Canteen 82, 83
Operation Enduring Freedom Flame Resistant Army Combat Uniform (OEF FR ACU) 39
Overcoat 42

P
Parachutist Drop Bag (PDB) 110, 111
Parachutist Oxygen Mask (POM) 104, 105
Poromeric Oxfords 42, 43
Portable Helicopter Oxygen Delivery System (PHODS) 157, 182, 183
Primary Survival Gear Carrier 156, 159

Q

R
Rigger Belt 76, 77

S
Self-Contained Toxic Environment Protective Outfit (STEPO) 98, 99
Self-Inflating Sleeping Mat 86, 87
Shin Guards 34, 35
Sleeping Mat 86, 87
Snow Camouflage White Mitten Shells 71
Sock Liner, Dress Sock 76
Soldier Force Protection System 194
Soldier Plate Carrier System (SPCS) 9, 12, 13
Soldier Power 188
Suit, Contamination Avoidance, Liquid Protective (SCALP) 94, 95
Summer Flyer's Glove 72, 73
Survival Kit, Ready Access, Modular (SKRAM) 158, 172, 173

T
T-10D Parachute 102, 103
Tactical Communication and Protective System (TCAPS) 190
Tactical Tripod Kit (TTK) 218
Target Location Designation System (TLDS) 150, 151
Topically Applied Face Gel 112
TRIGR 145, 146, 147
Two-Quart Collapsible Canteen 82, 83

U
U.S. Army Firefighter's Integrated Suit–Combat (FIS-C) 94

V
Vector 21 145, 146, 147

W
Washable Wool Products 112
Weapons Mounted Light (WML) 84, 138, 139
Wearable Environmental Control System (WECS) 160
White Cardigan Sweater 42, 43
Women's Class A Uniform 42, 43
Women's Class B Service Uniform 42

X
XM25, Individual Semi-Automatic Airburst System (ISAAS) 198, 199, 200, 201
XM205 Lightweight Tripod for Heavy Machine Guns 258
XM806 Lightweight .50 Caliber Machine Gun 246, 247
XM2010 Enhanced Sniper Rifle (ESR) 199, 216, 217
X-Side Ballistic Insert (XSBI) 10
X-Threat Small Arms Protective Insert (XSAPI) 10

Y

Z

PEO Soldier Offices

Program Executive Office Soldier's mission is, first and foremost, to serve the Soldier. We are committed to providing our warfighters with world-class equipment that will enable them to be more lethal and survivable in any operating environment. To meet these requirements, PEO Soldier manages nearly 468 products and programs.

PEO Soldier comprises the following Project Management and special activities offices:

PROGRAM EXECUTIVE OFFICE SOLDIER
Ft. Belvoir, VA

PROJECT MANAGER SOLDIER PROTECTION AND INDIVIDUAL EQUIPMENT
Ft. Belvoir, VA

- **Product Manager Soldier Clothing and Individual Equipment**
  Ft. Belvoir, VA
- **Product Manager Soldier Protective Equipment**
  Ft. Belvoir, VA

PROJECT MANAGER SOLDIER SENSORS AND LASERS
Ft. Belvoir, VA

- **Product Manager Soldier Maneuver Sensors**
  Ft. Belvoir, VA
- **Product Manager Soldier Precision Targeting Devices**
  Ft. Belvoir, VA

PROJECT MANAGER SOLDIER WARRIOR
Ft. Belvoir, VA

- **Product Manager Air Warrior**
  Redstone Arsenal, AL
- **Product Manager Ground Soldier**
  Ft. Belvoir, VA
- **Product Manager Mounted Soldier**
  Ft. Belvoir, VA

PROJECT MANAGER SOLDIER WEAPONS
Picatinny Arsenal, NJ

- **Product Manager Crew Served Weapons**
  Picatinny Arsenal, NJ
- **Product Manager Individual Weapons**
  Picatinny Arsenal, NJ

For more information about Program Executive Office Soldier, please contact:

Strategic Communications Office
703-704-2802/DSN 654-2802
peosoldier.army.mil

Follow us on: